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ABSTRACT

Many researchers believe that prior knowledge is the single most important variable influencing learning. Learning in the classroom is determined or affected positively or negatively, to some degree, by the knowledge people bring to the classroom. This study was designed to: (1) assess fifth- and eighth-grade Korean students' misconceptions of concepts related to photosynthesis; and (2) investigate change in students' concept understanding as it related to logical reasoning ability, textbook emphasis and background variables. Results showed that students in both groups had misconceptions of concepts related to photosynthesis--the meaning of making food, the use of light by plants, the functions of plant roots and leaves, photosynthetic products, and requirements of elements. Reductions in misconceptions between grade 5 and grade 8 was on items regarding the use of light by plants, exchange of materials between organisms in a system, knowledge of glucose, protein, fat, and nitrogen, and the skill of reading a graph. Appendices include a concept map of photosynthesis, tests, the questionnaire used, variable labels, correlation matrices, and a comparative achievement analysis. (RT)

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AN INVESTIGATION INTO FIFTH AND EIGHTH GRADE KOREAN STUDENTS' MISCONCEPTIONS OF PHOTOSYNTHESIS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Jung-il Cho, B.S., M.A.

* * * * *

The Ohio State University

1988

Dissertation Committee:

Robert W. Howe, Ph.D.

Stanley L. Helgeson, Ph.D.

John F. Disinger, Ph.D.

Approved by

Robert W. Howe

Robert W. Howe, Advisor
College of Education

SE049 417

AN INVESTIGATION OF FIFTH AND EIGHTH GRADE KOREAN STUDENTS' MISCONCEPTIONS OF PHOTOSYNTHESIS

By

Jung-il Cho, Ph.D.

The Ohio State University, 1988

Professor Robert W. Howe, Advisor

The purpose of this study was to assess fifth- and eighth-grade Korean students' misconceptions of concepts related to photosynthesis, and to investigate change in students' misconceptions and the relationships between students' concept understanding and logical reasoning ability and textbook emphasis and background variables.

Three instruments were developed for this study. The Photosynthesis Concepts Test (PCT) was developed for assessing students' understandings of concepts related to photosynthesis; the Piagetian Logical Reasoning Test (PLRT) for assessing three logical reasoning skills included in the PCT--control of variables, combinatorial reasoning, and correlational reasoning; and a questionnaire for gathering information about students' background variables.

A textbook analysis was made of Korean science textbooks from fourth through eighth grades to measure the emphasis by the textbooks on the PCT items.

The three instruments were administered to 201 fifth- and 239 eighth-grade Korean students, followed by interviews with 20 students.

The results of the study showed that students in both groups had misconceptions on concepts related to photosynthesis--the meaning of "making food," the definition of food, the use of light by plants, the functions of plant roots and leaves, photosynthetic products, and requirements of elements for photosynthesis.

Reduction in misconceptions between fifth- and eighth-grades was shown in items regarding the use of light by plants, exchange of materials between organisms in a system, knowledge of glucose, protein, fat and nitrogen, and the skill to read a graph. These items all had high textbook emphasis at the upper grade levels and required higher reasoning levels.

Regression results indicated that prior knowledge and logical reasoning ability were two major predictors of the PCT achievement, accounting for 22 percent of the variance at the fifth-grade level and 40 percent of the variance at the eighth-grade level.

Further research is needed including experimental studies on reducing students' misconceptions by modifications of instructional conditions in terms of abstractness, appropriateness, and reasoning and ability required.

DEDICATION

To my wife

5

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During the four-year doctoral program, I was indebted to many people. With the completion of the program, I would like to express my sincere gratitude to all of them.

Dr. Robert Howe, my advisor of dissertation, deserves my special thanks. It was my privilege that I have been under his direction through the doctoral program. I appreciate Dr. Howe especially for his affection toward students, understanding, excellent teaching, tireless spirit of work, professional knowledge, insight, and patience.

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My wife, who did her best for her husband and two children, Sungjoon and Sunghee during her first five years of marriage, deserves all the honor, love and gratitude which I can express by dedicating this dissertation to her.

Now I would like to share my joy of this accomplishment with my family and my wife's family for their support in every way.

Above all, Dear Lord, I give my sincere thanks to you. You have been faithful in all your promises to me. Now I promise you that I will be faithful to you, and I will keep your Word for all my life. I know this four-year experience has been a part of your plan for your servant. Be glory and praise to you forever, Hallelujah!

VITA

1974-1977.....Jeonju High School, Jeonju, Jeonbuk

1978-1982.....B.S., Department of Biology Education, Seoul National University, Seoul, Korea

1982-1984.....M.A., Seoul National University, Seoul, Korea
Lecturer, Duksung Girl's High School, Seoul, Korea

1984-1988.....Department of Educational Studies, The Ohio State University, Columbus, Ohio, U.S.A.

1985.....Graduate Administration Associate, The Ohio State University

1987-1988.....Graduate Research Associate, ERIC Clearinghouse for Science, Mathematics, and Environmental Education, The Ohio State University

FIELDS OF STUDY

Major Field: Science Education

Science Education	Professor Robert W. Howe Professor Patricia E. Blosser
Educational Research	Professor Robert W. Howe Professor Arthur L. White Professor John J. Kennedy
Teacher Education	Professor Donald R. Cruickshank
Biology	Microbiology Aquatic Botany Plant Physiology Theoretical Ecology

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CHAPTER I

INTRODUCTION

1.1 NEED FOR THE STUDY

1.1.1 MISCONCEPTION STUDIES

From the beginning of the 1980's, the study of misconceptions has been very active, with much interest in cognitive aspects of science learning. What knowledge people already have is a question often posed by researchers studying misconceptions in science fields (Novak, 1987; Helms and Novak, 1983; and Siegler, 1983). As far as the importance of the knowledge people already have is concerned, it was argued that it is the most important single factor influencing learning (Ausubel, Novak and Hanesian, 1978). What people do or do not learn in the classroom is determined, to some degree, by what they bring to the classroom.

Several studies have found that what people already know may affect positively or, more often, negatively their further learning. Smith and Anderson (1984a,b) found that students in the fifth year of schooling had misconceptions regarding how plants get food; and the teachers who participated in the study did not change their misconceptions in

spite of various kinds of teaching strategies. It was revealed that misconceptions were held by all age levels of people in most subject matters. Especially in the biological sciences, the following concepts have been studied: photosynthesis (Simpson and Arnold, 1982; Roth, 1984; Wandersee, 1985; Treagust and Halsam, 1986), ecosystem (Marek, 1986b), genetics (Kinnear, 1983;and Fisher, 1985), animal identification and classification (Trowbridge and Mintzes, 1985), natural selection (Brumby, 1984), osmosis (Friedler, Amir and Tamir, 1985), and combined areas (Clough and Driver, 1985; and Za'rour, 1975).

1.1.2 THEORY-BASED EXPLANATION FOR ACQUISITION OF KNOWLEDGE

Theories which have been presented by Ausubel (1963), Gagne (1979) and Piaget (1958) have a commonality in that they postulate that new knowledge is acquired based on existing knowledge. In other words, these theories share a constructivist view, maintaining that people acquire and organize new knowledge logically consistent with existing knowledge (Pines and West, 1986; Hewson and Hewson, 1984; and Champagne and Klopfer, 1983).

According to the constructivist view, if people have incorrect knowledge about a phenomenon, and are given incorrect information about it via any media, they continue to hold the incorrect knowledge. If people have incorrect knowledge about a phenomenon, and are given correct infor-

mation about it, they may change their existing knowledge and accommodate the new conflicting idea (Hewson and Hewson, 1984; Ausubel, 1979; and Inhelder and Piaget, 1958), or they may keep the existing incorrect knowledge, not recognizing mutual contradictions between the existing and new given idea or ignoring the new and less familiar idea, or they may keep both by compartmentalization (Pines and West, 1986; and Champagne and Klopfer, 1980).

It was shown that Piagetian reasoning ability was correlated with general and science learning, r=.4-.5 (Walberg, 1984). In a study to identify factors influencing learning of classical mechanics, Champagne, Klopfer and Anderson (1978) investigated causal relationships between college physics students' success in learning classical mechanics, and preinstructional knowledge of mechanics, mathematical skills and reasoning skills. The results showed that low scorers on logical reasoning tests got low scores in mechanics achievement, while high scorers on the logical reasoning test did not necessarily get high scores in mechanics achievement. The ,upper outlier group of the mechanics achievement gave more evidence of reflective thinking than did the lower outlier group; the responses reported by the upper group were based on knowledge rather than on observation more than the lower group.

Formal reasoners are more likely to be reflective thinkers (Karplus, 1979).

These findings suggest some relationships between students' understandings of scientific concepts and logical reasoning ability. Therefore, in order to achieve accurate understandings on the origins and characteristics of misconceptions, the variable of students' logical reasoning ability needs to be included in misconception studies. Misconceptions were found to be related to incorrect logical steps or processes (Smith, 1986; Trembath, 1981; Champagne, Klopfer, Solomon and Cahn, 1980). In addition, misconceptions could be identified in perceptual and descriptive knowledge systems and in explanatory knowledge systems (Champagne and Klopfer, 1983; Lawson, 1986).

In summary, failure in acquiring a correct concept or holding of misconceptions may be attributed to lack of existing knowledge and/or underdevelopment of reasoning skills such as control of variables, combinatorial reasoning, and correlational reasoning.

1.1.3 INSTRUCTIONAL EFFECTS-QUALITY AND QUANTITY

In the synthesis of research by Walberg (1984), instructional effects made major contributions to learning outcomes. Except for the variable of time, most instructional effects were made by qualitative approaches such as innovative instructional strategies, effective curriculum devel-

opment (goals or objectives, textbooks, classroom teaching), and effective teacher training. Development of teaching strategies and materials which took account of students' misconceptions (Roth, 1984; Erickson, 1983; and Confrey, 1983); development of theoretical model for conceptual change (Posner et al., 1982; and Hewson and Hewson, 1984); and experimental studies to compare content structure in science instructional materials with knowledge structure in students' memories (Champagne, Klopfer, Desena and Squires, 1978) have been attempted.

The quantitative approach is about time or emphasis, that is, the numbers of objectives or goals of curriculum, textbook emphasis, and instructional emphasis. In the study by Walberg (1984), instructional time had an overall correlation of about 0.4 with learning outcomes. In the fields of science and mathematics, international studies have revealed that low instructional emphasis was related to students' low achievement (Comber and Keeves, 1973; and Second International Mathematics Study, 1986). The fact that the psychological familiarity with concepts to be learned is a significant factor in concept understanding (Ausubel, 1979; and Driver and Easley, 1978) suggests the need for articulated emphasis of concepts in textbooks and instruction.

In order to investigate the impact of instructional emphasis on students' concept understanding, the quantitative approach was adopted in this study because 1) the textbook emphasis is a good estimate of curriculum emphasis and 2) if the instructional emphasis does not have an impact, the quality isn't likely to be effective; if the quantitative approach does relate to the outcome, it opens up new research questions for future study.

1.1.4 IMPORTANCE OF THE STUDY

There has been only one reported misconception study involving Koreans at this time (Jung, 1985). Therefore, this study has an instrumental importance for misconception study in Korea. A general scheme for research on students' misconceptions consist of the following steps: 1) identify students' misconceptions in the field to be studied; 2) find the factors which contribute to formation of such conceptions and their resistance to change, for example, instructional materials, instruction, teacher's knowledge, learner's ability and background, etc; and 3) perform experimental study, following modification of the existing learning conditions focusing on changing students' misconceptions.

Since the misconception study in Korea is at the initial stage, this study was designed to reveal data related to the first two steps. Accordingly, this study provides

descriptive and correlational information on students' misconceptions and the correlates of students' understanding of a biological concept.

1.1.4.1 Concepts to be Studied

At elementary and secondary level, Korean science textbooks cover content related to photosynthesis to a moderate degree. The concepts covered in the textbooks are apt to range from familiar to less familiar ones, and from simple to complex ones, so that students' conceptions can be assessed applying the framework of psychological and logical orders.

Several studies have reported students' misconceptions on photosynthesis (Murr, 1986; Halsam and Treagust, 1986; Wandersee, 1985; Smith and Anderson, 1984a; Roth, 1984; and Simpson and Arnold, 1984). These studies focused on only students' knowledge, but not on the relationships between such knowledge and logical reasoning ability and instructional emphasis. The present study includes all of the three variables-- prior knowledge, logical reasoning ability and instructional emphasis--to explain students' conceptions about phenomena related to photosynthesis.

1.1.4.2 Age Levels to be Studied

Two age levels, eleven and fourteen year olds, represent fifth and eighth grades in Korea, respectively. The two levels represent elementary and junior high schools. There is a big gap between elementary and junior high levels in terms of the school system and students' developmental growth (Inhelder and Piaget, 1958). The contents of junior high science textbooks include many formal level concepts; they are oriented to nurturing essential concepts in science disciplines rather than life-oriented concepts; and the structure of the textbooks emphasize acquisition of knowledge rather than enquiry learning (the former characteristics indicating the junior high level and the latter indicating the elementary level).

The two age levels belong to different developmental stages, eleven year olds to concrete reasoning level; fourteen year olds to formal reasoning level (Inhelder and Piaget, 1958). Even though most studies regarding the cognitive stage have shown that a considerable percentage of high school students did not reach formal reasoning level, it seems to be evident that at the junior high level rapid growth occurs psychologically as well as physically (Blosser, 1986). In this study it is assumed that the two grade levels show a wide enough range of cognitive development to give appropriate variance in the Piagetian Logical Reasoning Test.

1.2 STATEMENT OF PROBLEM

It was the purpose of this study to obtain information on students' conceptions of selected biological phenomena related to photosynthesis and then to investigate the relationships between students' understandings of the concepts and textbook emphasis, Piagetian logical reasoning ability, and student background variables. The following questions were explored in this study:

1. What are the students' understandings of concepts related to photosynthesis?
2. What is the relationship between students' understandings of concepts and the textbook emphasis of the concepts?
3. What is the relationship between students' understandings of concepts and Piagetian logical reasoning ability?
4. What are the relationships between students' understandings of concepts and student background variables such as sex, parents' educational level, science grades, attitudes toward science classes, extracurricular activities, science learning, science as favorite subject and science learning style?
5. How are the variables which account for most of students' understandings of concepts different between fifth and eighth grade levels?

1.3 HYPOTHESES

Appropriate statistics were used to fail to reject or reject the following null hypotheses:

1. There are no significant differences in students' understandings of concepts related to photosynthesis between fifth- and eighth-grade students.
2. There is no significant relationship between students' understandings of concepts and the textbook emphasis on the concepts.
3. There is no significant relationship between students' understandings of concepts and Piagetian logical reasoning ability.
4. There are no significant relationships between students' understandings of concepts and student background variables such as sex, parents' educational level, science grades, attitudes toward science classes, extracurricular activities, science learning, science as favorite subject, and science learning style.
5. There is no difference between fifth- and eighth-grade levels in terms of order and kind of the variables which account for most of students' understandings of concepts.

1.4 ASSUMPTIONS

The following assumptions are made in this study:

1. Three instruments-- the Photosynthesis Concepts Test (PCT), the Piagetian Logical Reasoning Test (PLRT), and the Questionnaire--throughout eight classes from four schools were administered under the same administration condition.
2. The concepts targeted for investigation are important for learnings within the field of biology and are basic for students' future learnings in science.
3. The concepts assessed in the PCT were taught in classrooms based on the contents of the science textbooks which have been used by fourth- through eighth-grade Korean students.
4. The samples were sufficiently different in terms of cognitive development to show appropriate variance in the Piagetian Logical Reasoning Test.

1.5 DELIMITATIONS

The delimitations of the study are as follows:

1. The population of the study was limited to fifth- and eighth-grade Korean students.
2. The concepts assessed in the study were limited to the concepts related to photosynthesis covered by science textbooks used in Korea at fourth- through eighth-grade levels.

3. Assessment of students' understandings in the PCT was limited to three lower levels of Bloom's taxonomy, that is, knowledge, comprehension, and application.
4. Textbook analysis was limited to the biology sections of the science textbooks used at fourth- to eighth-grade levels.

1.6 LIMITATIONS

The limitations of this study are as follows:

1. The results of this study cannot be generalized beyond the sample group in Korea.
2. All the elementary and junior high Korean students use the same science textbook. Hence the effect of different instructional materials on science achievement cannot be a variable in this study.
3. School and teacher effects were not examined.

1.7 DEFINITIONS OF TERMS

1. Misconceptions: Representations of concepts which are conceptually incorrect or deficient.

2. Subordinate concepts (superordinate concepts): Concepts which are intercorrelated to form a more inclusive and abstract concept (called a superordinate concept).

3. Conceptions: Idea formulated in the pursuit of making sense of the world.

4. Accommodation: The process of transforming the existing knowledge in conflict with new given information to be logically consistent.

5. Constructivism: Theory which focuses on the acquisition, understanding and application of bodies of conceptual structures of accepted public knowledge and emphasizes interaction of existing knowledge with new knowledge (from Lisowski, 1987, p.8).

6. Conceptual change model: Model of learning which aims at facilitaing people's change of incorrect conception by contrasting new conflicting conceptions against the existing incorrect ones and by showing the superiority of the new conceptions to the existing ones.

7. Implemented curriculum: The body of biological knowledge and skills which is actually taught by teachers.

8. Intended curriculum: The body of biological knowledge and skills contained in science textbooks.

9. Photosynthesis: A series of processes in which plants synthesize glucose using light as energy source and water and carbon dioxide as raw materials.

10. Concept hierarchy: Hierarchically organized structure of interrelated concepts.

11. Population of the study: A total of 440 Korean students selected from four fifth-grade classes and four eighth-grade classes.

1.8 ANALYSES OF DATA

All possible categories were coded dichotomously. Frequency analysis was done to get descriptive results and to determine variables inappropriate for further analysis. Correlations of overall variables were investigated to look at relationships between variables. Correlation analysis with some significant variables, if necessary, recoding variables with weight, was done to identify relationships which are presented in hypotheses. Determinations of significance of relationships were done using correlation coefficient, Chi-square and t or F values. Regression analysis was done to identify relative degree of explanation by relevant variables for students' understanding concepts.

1.9 OVERVIEW

The dissertation includes five chapters.

Chapter One presents need for the study, statement of problem, hypotheses, assumptions, delimitations, limitations and definitions of terms and analysis of data.

Chapter Two includes a literature review. This focuses on concept understanding in biological sciences, Piagetian logical reasoning ability, and effect of instructional emphasis on achievement.

Chapter Three contains the sections of overall design, population, instrumentation, curriculum analysis, data collection and analysis of data.

Chapter Four includes sample characteristics, students' logical reasoning ability, students' understanding of biology concepts, and correlation and regression analyses.

Chapter Five consists of a brief summary, results of testing hypotheses, conclusions, and recommendations for future research and practice.

CHAPTER II

LITERATURE REVIEW

This chapter reviews literature related to the following variables: concept understanding in biological sciences, Piagetian logical reasoning ability, relatioship between concept understanding and logical reasoning ability, and effects of instructional emphasis on achievement.

2.1 CONCEPT UNDERSTANDING IN BIOLOGICAL SCIENCES

Since the beginning of the 1980's, students' misconceptions in biological sciences as well as in physical sciences have been actively investigated. In many areas of biological sciences such as photosynthesis, ecosystems, gas exchange, animal identification and classification, amino acids and translation, osmosis, etc., students' misconceptions were studied.

Using interviews and written multiple-choice surveys, students' understandings of concepts related to plant nutrition and gas exchange were studied (Simpson and Arnold, 1982). Data revealed that students used the term "food" differently from its usage by scientists: That is,

plants get their food from soil via the roots. Students also had misconceptions in relation to the role of air in plants, functions of plant parts, and the role of chlorophyll in photosynthesis.

In an effort to examine students' conceptions of probability in two contrasting contexts, namely a 'traditional' genetics context and a 'real world' context, Kinnear (1983) investigated first year college students' conceptions (n-59) using two written tests, that is, a 'real world' test and a genetics test which asked students to answer each item and to give an explanation for their answer. The result showed that among four of six items, for both the 'real world' and the genetics tests, the mean score for the ' real world' test (mean score-3.1; s.d.-1.3) was much higher than the mean score for the genetics test (mean score-0.7; s.d.-1.1). Students' explanations showed that when they faced genetics problems, they stuck to the rule of ratios to solve the problems. An error which students showed in both contexts was that they interpreted a 1 in 4 probability of a given outcome as meaning that the outcome will occur once in each four events.

A case study as part of a larger study of teachers' use of curriculum materials in planning and teaching fifth grade science was performed by Smith and Anderson (1984a). The report focused on one of nine teachers whose classrooms

had been observed when they were teaching a unit of the Rand McNally SCIIS program on plant growth and photosynthesis. Although the teacher became aware that her students held certain misconceptions about plant growth, she was unsuccessful in helping them replace their misconceptions with the scientific conceptions she wanted them to learn. The analysis revealed several factors that contributed to this disappointing result. The teachers and the curriculum developers held different views about learning and the nature of science, and several problems were pointed out about the content and organization of the teacher's guide.

Fifteen year old students' written responses to questions were analyzed to give insight into the ways in which students conceptualized plant nutrition (Bell, 1985).

The main alternative ideas used by the students in their written responses were that: Plants obtain their food from the environment rather than manufacture it internally; food for plants is anything taken in from the outside, for example, water, minerals, air, etc.; and chlorophyll is a food substance, or is used for food storage, or is a life-giving substance. In addition, they showed little understanding of the relationship between food and energy. Most students' understandings of the relationship did not go beyond knowing simply that food and energy are essential requirements for plant growth.

A study about the concept of natural selection was performed by Brumby (1984) with 150 first year medical students of about 18 years of age. Three instruments were used for this study--a set of written problems, an interview, and a final examination.

In the first phase, two thirds of the students recognized that the insecticide problem was based on natural selection of those insects which were already resistant to the insecticide. The remaining one third of the students used phrases such as "The insects adapted," or "The insects gradually became immune to insecticides."

In the antibiotics problem, only 21 of the 150 students correctly explained this problem in terms of selection of variation in a bacterial population. Several different erroneous ideas were found as follows: Human body, not the bacteria, is the primary target of the antibiotics; the human body becomes immune to antibiotics; and confusion occurred between antibiotics and antibodies.

In an interview, students were asked questions regarding the basic concepts or ideas contained in the insecticide and antibiotics problems. Only one third mentioned natural selection or evolution. Nearly one third identified immunity or adaptation as the basal concepts, and the remainder focused on the social problems of drugs and drug abuse.

It was concluded that the majority of the students in the study left school believing that evolutionary change occurs as a result of need, which is a Lamarckian view. The errors made by the students were far more than simple errors of knowledge, rather stemmed from a faulty reasoning pattern.

Roth (1984) used classroom observation to improve science teaching and curriculum materials. She observed an elementary science classroom taught by a teacher based upon activity-oriented textbook; gave feedback from the observation to the classroom teacher during interviews; administered written tests to measure students' understanding about how plants get their food; and revised the teacher's guide and developed a text to clearly address students' misconceptions and to make explicit the contrast between their misconceptions and the scientific explanations of photosynthesis. As a result, fundamental changes were observed from the classroom teacher in terms of her explicit and implicit views of teaching and learning, ways of presenting content, and ways of confronting misconceptions. In addition, significant improvement in students' understanding on concepts related to photosynthesis was made.

From several years of college biology teaching experience, Fisher (1985) recognized that many students had failed in an item across several years. In the multiple-

choice item she asked the introductory and genetics class students to select the product of translation among four alternatives as answers: Amino acids, Transfer RNAs, Activating enzymes, and Messenger RNAs.

In the examination and the following interviews, some students expressed the belief that amino acids are produced by genetic translation (protein synthesis). The author suggested four major underlying factors which seemed to contribute to error occurrance:

1) word-association between the terms 'amino acids' and 'protein.' Students would be reminded of the terms whenever either of the two is referred to;

2) confusion resulting from familiar and unfamiliar levels of generality and speciality. When the test items changed in terms of the typical level of generality or familiarity, student performance was highest when all answer choices were expressed at the most general and familiar level. Performance dropped about 10 percentage points in the specific/specific and specific/intermediate-general cases. However, when the three wrong answer choices were expressed at the familiar level of generality while the correct answer choice was given as a specific instance, performance dropped 34 percentage points;

3) role-conflict resulting from the dual roles of some proteins as participants in and products of translation; and

4) lack of knowledge about the actual origins of amino acids in cells.

An exploratory study to identify students' difficulties in understanding concepts pertaining to cell water relations was performed by Friedler, Amir and Tamir with Israeli students (1985). The subjects consisted of ninth grade students(n-64), tenth grade students(n-40), eleventh grade students(n-38) and student teachers (n-16). Data, which came from 72-true/false items and individual interviews, revealed that student teachers as well as students performed poorly on the items which required knowledge of chemical concepts such as solutions and solubility. Special difficulties were found with regard to osmotic processes in living organisms and to the concepts of solubility, osmotic pressure, osmotic potential and water potential. The authors suggested that factors such as textbook emphasis, epistemologistic tendency such as teleology and anthropomorphism, and teachers' lack of knowledge contributed to students' improper or deficient understandings of cell-water relations.

In order to explore the effects of different task contexts on consistent use of students' conceptual frameworks, four physical ideas and two biological ideas regarding non-inheritance of acquired characteristics and natural selection were investigated through interviews preceded by dem-

onstrations of two tasks related to each idea (Clough and Driver, 1985). Eighty four students of 12, 14 and 16 years of age were selected randomly, with stratification based on the results of a short relational reasoning test. After two years passed, the two younger age groups were retested with the same tasks.

In the first stage of data analysis, the authors categorized the responses based upon the type of reason or explanation offered. In the second stage, the responses were compared between two parallel tasks. Here, if a category of response occurred in more than one task, it was called a 'framework'. Once frameworks used in parallel contexts had been identified, the consistency of responses across contents at both individual and group levels was investigated.

In relation to non-inheritance of acquired characteristics, the results indicated that frameworks were identified among the groups of students and a degree of consistency was detectable in the responses of individuals; and a relatively small change towards a more scientific understanding of the biological phenomena was made at both population and individual levels in the age range studied.

A study was designed by Wandersee (1985) to focus on the photosynthesis concept and to search for relationships which might exist between students' conceptual difficulties

and the transformation of the photosynthesis concept through time as rated by a historian of science. Elementary, secondary and college students (n=1,405) were asked to complete the Photosynthesis Concept Test (PCT). It was found that students' concepts of photosynthesis continued to change as they moved through the educational system, but little improvement over time was noted on some concepts. The results also showed that students' misconceptions were comparable with historical alternatives in such concepts as function of leaves and importance of carbon dioxide as the major source of raw material for photosynthesis.

A study was conducted in Nigeria to determine some common misconceptions held by secondary school students with respect to selected ecological concepts covered in the Nigerian Secondary School Science Project Biology text (Adeniyi, 1985). The content of the written essay test was determined by analyzing the curriculum content as it was found in classroom instruction, text materials, lesson plans, and teacher examination on ecology. The results showed that students held a variety of misconceptions in the area studied. Such misconceptions appeared to result from two sources--conceptions already held by students and misconceptions introduced during instruction.

Students' alternative conceptions of animals and animal classification were examined at elementary, secondary and

college levels (Trowbridge and Mintzes, 1985). A structured, clinical interview and a classification task were used in the study. The results revealed that students of all age groups applied the label 'animal' principally to familiar vertebrates, that is, undergeneralization was shown; and they failed to discriminate between closely related groups of animals, that is, overgeneralization was shown. Of college students who recognized the crab as an invertebrate, 45 percent misclassified it into fish and 30 percent misclassified it into amphibians.

A two-tiered instrument whose first tier consisted of multiple-choice questions and second tier consisted of a multiple-choice set of reasons for the answer given in the first tier was developed to measure students' misconceptions about photosynthesis and respiration in plants (Treagust and Halsam, 1986). A total of 438 Australian students from eighth grade through twelfth grade completed the instrument. The results showed that students held misconceptions in some areas related to photosynthesis, respiration and the relationships between them, and that the misconceptions persisted across year levels.

Biology students' understandings and misunderstandings of the concepts of cell and diffusion were investigated in a study performed by Marek (1986a). Sixty tenth grade students responded to an essay-type instrument. Students'

responses were categorized into four categories-- No Response, Partial Understanding, Sound Understanding, and Specific Misunderstanding. The results showed that in relation to the cell concept, only 15.8 percent of the students demonstrated sound understanding, 28.1 percent showed partial understanding, 36.8 percent showed specific misunderstanding, and 19.3 percent had no response; in relation to the process of diffusion, only 1.8 percent of the students demonstrated sound understanding and 50 percent showed specific misunderstandings.

In another study, Marek (1986b) identified students' lack of understandings of the concepts of food chain and ecosystems. Of the 58 students in the sample, only one student (2 percent) had a sound understanding of the concept of food chain. Only 34 percent demonstrated partial understanding of a food chain; 57 percent showed specific misunderstanding; and 7 percent had no response.

For the ecosystem statement, 31 percent of the students demonstrated partial understanding and 33 percent showed specific misunderstanding. No student supplied a response indicating sound understanding of an ecosystem.

Murr (1986) investigated secondary- and college-level students' conceptions on some biological concepts and the effectiveness of prescribed forms of instruction which accommodated misconceptions. Various type of written test

items were designed to reveal students' misconceptions with respect to the animal concept, food webs, gene behavior, and plant respiration/photosynthesis. The test results showed that 1) a significant number of answers reflected an archaic pattern of thought; 2) they reflected a pattern of thought that projects casual experiences onto scientific settings; and 3) there was a significant relationship between holding certain misconceptions and a deficiency in associating these concepts to other related concepts.

The effectiveness of a method of instruction which called the students' attention to misconceptions was studied in comparison with a control method of instruction. The only difference between the control and the experimental method was that the latter used some instructional tools, explanations, discussions, and a concept map, designed to focus the students' attention on misconceptions. The results of the experiment showed that the experimental method of instruction was significantly more effective in accommodating misconceptions than the control method.

2.1.1 SUMMARY

Even though students apparently seemed to understand what biology teachers wanted them to learn, and even though they received passing grades, it was evident that students still had partial understandings, confusions, and misconceptions

in many areas of the biological sciences studied. Little improvement regarding students' understandings was shown across educational levels in spite of formal instruction in those areas.

Especially in the biological sciences, students' teleological explanations about natural phenomena seemed to contribute to the persistence of nonscientific conceptions. Several studies regarding consistency of students' thought in different contexts showed that they had their own logical frameworks concerning scientific phenomena. Ausubel's argument that meaningful learning can be facilitated only by recognizing students' preconceptions and by connecting them to new concepts to be taught provides a rationale for the preceding studies. In the next sections, studies on Piagetian logical reasoning ability and its relationship with concept understanding are reviewed.

2.2 PIAGETIAN LOGICAL REASONING ABILITY

In the field of science education, the topic of Piagetian logical reasoning ability has been given a lot of attention for the purpose of understanding essential characteristics of students' learning. According to Piaget (1958), there are three major periods in children's cognitive development, preoperational (applied to 2-7 year olds), concrete operational (to 7-11 year olds), and formal

operational (to 11-15 year olds). Even though the periods or stages show sequential progress in terms of children's conceptual organization of the surrounding environment from preoperational to formal, each stage has its own unique characteristics, a qualitative difference, which separats it from the others. The cognitive development can occur mainly through direct contacts with or active inquiry to the surrounding environment, and depends upon increase in his/her chronological age. This review includes reported studies which primarily focused on elementary and secondary students as subjects, measurement of cognitive developmental levels by written tests and Piagetian tasks, and validation of concrete and formal stages as two different constructs. Summaries of the studies are presented in chronological order of publication.

Lawson and Renner (1974) investigated the percentage of students of grade 7 to grade 13 entering the formal operational stage to determine whether or not Piagetian-type tasks measure the psychological parameters of concrete or formal operational thought that they purport to measure. Data showed that over 80 percent of junior high school students were at the concrete stage; about 70 percent of senior high school students were at the concrete stage; and 22 percent of first year college students had entered the stage of formal thought. However, the percentage of able

secondary science students at the formal stage was considerably higher than the other same age level students. It was concluded that two psychological parameters-- concrete operational and formal operational levels--could be isolated by two Piagetian-type tasks.

The relationship between Piaget's logical operations and achievement in earth science and biological science was studied by Raven, Hannah and Doran (1974). The subjects were 123 black college freshmen. The Raven Test of Logical Operations (RTLO) was used as the instrument to measure students' logical thinking ability. It was found that students' RTLO scores were significantly correlated with biology and earth science achievement test scores, and that the RTLO subtests could predict 38 percent of the variance in earth science achievement, 24 percent in biology science and 25 percent in reading skills.

Piaget's theory of development--that the development of the more complex operative structures such as proportional thinking depends upon the acquisition of simple operative structure such as seriation and compensation--was assessed by Raven and Guerin (1975). The study was performed with 896 students, ranging in age from eight to 19 years taking the Raven Test of Logical Operations. It was concluded that there was no linear hierarchical structure among the logical operations, but two factors which seemed to

describe concrete and formal operative structures could be isolated.

An attempt to construct group administration forms based upon two Piagetian-type tasks--the Chemical Color Change experiment and Pendulum experiment-- was made with eight Australian high school classes (Rowell and Hoffman, 1975). The data showed dual trends of both increase in percentage of formal thinkers with increase in chronological age and the higher percentage of formal thinkers in the upper stream at the various grade levels. The Pendulum experiment provided an earlier indication of the onset of formal thinking than did the Chemical one. It was concluded that it seemed possible to translate Piagetian-type tasks into group administration forms with considerable reliability.

A relationship between scholastic grades in science and ability to perform formal operational tasks was explored with junior and senior high school students (Sayre and Ball, 1975). The Piagetian Task Instrument (PTI) used with individual interviews was constructed, consisting of five tasks requiring formal operations. The findings indicated that formal operational students got higher scholastic grades in science subjects than did non-formal operational students.

Hierarchical sequences in science concept learning were questioned by Robertson and Richardson (1975). They

selected 50 students from each of the grades 7 to 10 and administered a written test, with a demonstration about the materials and operations used in the test. The result supported the hypothesis that there were possible hierarchical sequences for learning science concepts, especially physics concepts.

A relationship between conservation reasoning ability and performance on the BSCS blue version examination was investigated by Lawson and Nordland (1975). The authors classified BSCS blue version examinations into items requiring concrete and formal reasoning for successful completion. Students with the ability to conserve achieved significantly higher on the examination items than did nonconservers. However, some students categorized into concrete or preoperational stages scored above the level of chance on the formal items, while some students considered formal scored next to no success on the formal items. This result showed that demonstration of conservation reasoning in no way insures success in understanding such biology concepts.

Lawson and Blake (1976) investigated the possibility that Piaget's logical operations could be closely linked to specific content. A comparison of results from three separate measures--a battery of Piagetian tasks, a biology examination and a content-free logical reasoning test--

showed similar percentages of subjects at the concrete and formal levels. It was concluded that Piagetian tasks are relatively content free and can serve as realistic indicators of concrete and formal thinking abilities.

Lawson and Nordland (1976) examined the factor structure of Piagetian conservation tasks with 96 seventh grade students. Only two components were isolated, accounting for 56 percent of the total variance. They concluded that these tasks measured two types of reasoning, namely, concrete and formal operational thought.

A study on Piagetian reasoning ability was performed with 66 fifth and ninth Thai students (Sintoovongse, 1978). The results revealed that the ninth graders significantly outperformed the fifth graders in solving problems requiring some logical operations such as logical multiplication, compensation and ratio; but in problems requiring other logical operations such as probability and correlational thinking, no significant differences were found. In their reasoning patterns, the students were still at the stage of concrete reasoning.

The Cognitive Analysis Project (CAP) was undertaken to develop a system to assess a person's level of intellectual development; the project assessed developmenting the use of written language in solving a science problem (Renner, 1980). Four science problem statements called "incidents"

were developed, each incident including one of the following reasoning patterns: proportional reasoning, combinatorial reasoning and seperation and control of variables. A total of 919 students in grades 10, 11 and 12 were interviewed with the four corresponding Piagetian tasks and 811 of these students also completed the incidents. The results showed that the four incident scores could predict 36 percent of the Piagtian task scores. It was suggested that assesssing student intellectual levels with written instruments was probably not as ideal a procedure as assessment with a Piagetian task interview.

De Luka (1981) examined Piagetian stages for the purpose of identifying clustering patterns of intellectual development and their conformity to Piagetian stages. The author measured the individual performance of 182 males and 176 females 9-18 years old on six Piagetian tasks. The results supported Piaget's developmental stage theory in that there were some clustering patterns in intellectual development, and the clusters could be divided into Piagetian stages--the concrete and formal stages.

A group test, Science Reasoning Tasks (SRT) was developed to assess the ability of students to use concrete and formal reasoning strategies (Shayer, Adey and Wylam, 1981). The SRT instrument consisted of seven Piagetian- type tasks. Each subtest score was significantly correlated to

an interview score, with a correlation coefficient between .55 and .85. A factor analysis of the Piagetian level ascribed to each pupil by the selected five tasks showed a single factor, accounting for about 60 percent of the total variance. The test was considered a valid and reliable group test to assess children's formal reasoning strategies.

A formal evaluation of the Longeot test was conducted by Ward, Nurrenbern, Lucas and Herron (1981). From a literature review, they showed that the Longeot test had been effective for assessing the cognitive development of elementary and secondary students. The test was applied to college students between 17 and 20 years old. It was concluded that the test was also effective for assessing college students' cognitive development, for the test could discriminate predetermined groups in terms of the percentage of concrete level students.

The relative responsiveness of concrete operatonal seventh grade and college students to science instruction was investigated by Lawson (1982). The responsiveness was evaluated based upon instruction of two aspects of scientific reasoning, probabilistic reasoning and correlational reasoning in biology context. The results indicated that the college students outscored seventh grade students on all but one item.

Korean students' scientific reasoning development was assessed by Han, Choe and Kim (1982). A representative sample of 5,446 secondary school students with ages ranging between 12 and 17 years responded to paper and pencil logic tests. The results revealed that a relatively low percentage of students were at the stage of formal thought; and significant differences in the number of formal stage students were shown in terms of sex and residence, in favor of male and urban area, respectively.

De Hernandez (1984) investigated the relationships among gender, age, and intellectual development. It was revealed that males demonstrated a higher level of intellectual development than females, and that males matured intellectually earlier than females.

The contribution of conceptual diversity to the development of formal reasoning was investigated by Lawson and Beaker (1984). Students of grades 6, 8, 10 and 12 were selected from three different communities--rural, suburban-homogeneous, and suburban-heterogeneous. The results indicated that significant differences in formal reasoning were shown in favor of the suburban-heterogeneous sample on complex reasoning items. However, the differences decreased on less complex reasoning items.

2.2.1 SUMMARY

Piaget's theory of stages seems to be a valid psychological parameter of cognitive development, and could be assessed by written tests as a replacement for experiments or demonstrations. The cognitive stage level was found to correlate with science achievement and age and grade.

2.3 RELATIONSHIP BETWEEN CONCEPT UNDERSTANDING AND LOGICAL REASONING ABILITY

The relationship between the nature and extent of student misconceptions in chemical equilibrium and performance of specific tasks involving cognitive transformations characteristic of the concrete and formal operational stages of thought was investigated (Wheeler and Kass, 1978). A thirty-item misconception identification test(MIT), two combinatorial tasks, and a written test designed to assess ten logical operations were used with 99 twelfth-grade chemistry students. The results showed that MIT score was significantly related to performance in the combinatorial tasks at the 0.01 level; the combinatorial tasks accounted for 37.5 percent of the the variance of the MIT. A chi-square test of independence between the number of misconceptions and cognitive level indicated that formal level students had less misconceptions than did concrete level students.

Shayer and Wylam (1981) investigated the development of the concepts of heat and temperature in 10-13 year-olds. They used two tests--a 68-item demonstrated group-test and a Piagetian-type group-test in the area of volume and heaviness-- to see whether the development of concepts of heat could be mapped onto Piagetian stages of development. The sample was composed of two classes of 9-10 year-olds, one class of 11-12 year-olds, and three classes of 12-13 year- olds.

The results showed that the heat test was unifactor within itself and with Piagetian development. The percentage of subjects at each of the three levels of the heat test achievement corresponded to the proportion of subjects estimated at different Piagetian levels--2A, 2B, and 3A.

A study was performed to determine whether the logic assessed by specific Piagetian tasks was related to the logic postulated as needed to develop complete understandings of specific concepts in physics (Boram and Renner, 1985). Students enrolled in a college level physics class taught using the learning cycle took a six-physics-concept examination, and were interviewed with four Piagetian tasks--Balance beam task, Bending rods task, Billiard-type task, and Colored beads task. Each of the concepts was analyzed to determine the types of logic postulated to be required in their understanding.

The results indicated that the concept understandings were positively related to the performances in the postulated logics, but not statistically significantly. An overall correlation coefficent between the Piagetian task mean scores and the concept test mean scores was not significant.

Renner and Cate (1985) tested a hypothesis: If specific formal operations are required to understand certain biological concepts, then those high school students demonstrating the abilities to use those specific formal operations should be successful in developing understandings of biological concepts requiring the use of those specific formal operations. Twenty-two tenth-grade biology students were interviewed with six Piagetian tasks, each of which assessed combinatorial reasoning, correlational reasoning, exclusion of irrelevant variables, probabilistic reasoning, proportional reasoning, and separation and control of variables. Two biological questions containing the following content-- "Plant growth is not affected by chemicals," and "Heredity and environment interact in the expression of traits"--were used, and each question was postulated to require four formal operations.

The results indicated that formal thoughts were demonstrated only 24 times (27.3 percent) in responding to the first question; 25 times (28.4 percent) to the second ques-

tion; few agreements between the formal operations demonstrated on the tasks and those formal operations demonstrated in responding to the questions were found for the two questions. These data suggested that even if students demonstrate the ability to use specific formal operations on the interview tasks, there is not assurance that those same formal operatons will be used in responding to a question which is judged to require their use in order to produce a satisfactory response.

Prospective elementary teachers' views of the particulate nature of matter before instruction on the topic were investigated in relation to their formal reasoning capability (Gabel, Samuel, and Hunn, 1987). Fourteen-item nature of matter inventory, formal reasoning capability test, spatial visualization test and background information were used. The results indicated that 22.8 percent of the variance in the score on the nature of matter inventory was accounted for by students' formal operation score, and an additional 4.0 percent by the chemistry courses taken. Chemistry courses taken before were insufficient to bring students to a high level of understanding on most attributes of nature of matter.

2.3.1 SUMMARY

Even though it was not certain that attainment of reasoning skills assures students' understandings of science concepts which require such reasoning skills, people at higher reasoning level performed better on such concept problems.

2.4 EFFECT OF INSTRUCTIONAL EMPHASIS ON ACHIEVEMENT

This section reviews literature on the relationship of instructional emphasis with learning outcomes.

Comber and Keeves (1973) compared science achievement in nineteen countries and explained the differences of the achievement. Three categories of variables included for analysis in the study were instruction (time and quality), student background (social status, parents' educational level, extracurricular experience, etc.), and the community. Three age groups, which consisted of 10-year-olds, 14-year-olds and terminal year of secondary education students, participated in the study.

As far as the variable of instruction is concerned, for the youngest group of the participating countries, the relationship between reported instructional emphasis on the topic embodied in each item and item achievement was not consistent; for the older groups, the relationship was positively significant.

In an analysis between schools, for the youngest group, the factor that students had regular science lessons was not significantly related to achievement; for the older groups, formal contact with science instruction was significantly correlated with achievement.

In an analysis between students, the most significant factor related to achievement in science was the opportunity to learn.

The Second International Mathematics Study focused on the comparison of test achievement with curriculum emphasis (1985). Even though the variable of curriculum emphasis did not seem to be the only predictor of achievement, it was evident in some areas--for example, geometry (low emphasis) and arithematic (high emphasis)--that low achievements reflected low curriculum emphasis in the United States.

Cho (1984) investigated the relationship between concept emphasis in high school biology textbooks and achievement levels. Achievement levels for biology items from the 1976-1977 National Assessment of Educational Progress's science assessment for 17-year-olds were classified into one of ten commonly accepted conceptual areas in biology. Each objective from the three biology textbooks(Biological Science-An Ecological Approach, BSCS Green Version, Rand McNally and Company, 1973; Biological Science-An Inquiry

Into Life, BSCS Yellow version, Harcourt, Brace and World, 1973; and Modern Biology, Holt, Rinehart and Winston, 1973) was also categorized into one of the identified conceptual areas. Then the total number of objectives in each conceptual area was calculated. The resluts showed a significant, linear relationship between achievement level and concept emphasis in biology textbooks.

Lisowski (1987) investigated the relationship between instructional emphasis which was obtained by a teacher perception questionnaire and gain score of a pre and post ecology test. The results indicated that gains in students' scores in the major ecology concept strands were significantly related to the instructional emphasis given to those areas.

2.4.1 SUMMARY

The findings revealed that instructional emphasis on certain contents contributed to improvement of students' achievement.

CHAPTER III

RESEARCH DESIGN AND PROCEDURES

This chapter describes procedures involved in this study. Information is provided regarding overall design, population and sample, instrumentation, textbook analysis, data collection, and analysis of data.

3.1 OVERALL DESIGN

Three instruments were developed for this study. The Photosynthesis Concepts Test (PCT) was developed as one means of obtaining information about students' understanding of concepts related to photosynthesis (Appendix B). The Piagetian Logical Reasoning Test (PLRT) (Appendix C) was constructed for the purpose of assessing students' achievement of three reasoning skills-- control of variables, combinatorial reasoning, and correlational reasoning. These reasoning skills were judged to be prerequisite to solve most items of the PCT. A Questionnaire was developed to gather student background information and included educational level of parents; along with student data regarding science grades, attitudes toward science classes,

extracurricular activities, science learning, science as favorite subject, and science learning style (Appendix D).

Life science textbooks used by classes in the sample from fourth through eighth grades were analyzed in terms of their emphasis on the areas to be measured in this study. After administration of the above instruments, relationships of achievement on the PCT to average textbook emphasis, logical reasoning ability, and student data were investigated.

3.2 POPULATION AND SAMPLE

The population of the study consisted of 201 fifth-grade Korean students in four classes from two elementary schools and 239 eighth-grade Korean students in four classes from two junior high schools. Each selected elementary class was composed of both sexes; each selected junior-high class was composed of one sex of students, entirely males from the one school and entirely females from the other school. Permissions to take part in the study were obtained from the four school principals by letters. Two fifth-grade classes in each elementary school and two eighth-grade classes in each junior high school were selected randomly out of each grade classes for this study . All the schools were located in the innercity of Seoul, Republic of Korea. The communities to which these schools belonged were very

developed areas and within the realm of the economical and cultural centre of Seoul. The social status of the communities were at the very upper levels, in reference to the national norm.

3.3 INSTRUMENTATION

Data were obtained from three instruments developed by the author for this study. The inventories included the Photosynthesis Concepts Test (PCT), the Piagetian Logical Reasoning Test (PLRT), and the Questionnaire (Appendices B, C, and D, respectively).

3.3.1 DESCRIPTION OF THE PCT

3.3.1.1 Student Concept Understanding

Procedures involved in the development of the PCT instrument included: 1) selection of concept areas (determined through a review of science curricula, elementary and junior high science textbooks and college biological science books); 2) construction of a concept map using these concepts (Appendix A); 3) construction of a hierarchy of the concepts (Figure 1) based upon the concept map; 4) construction of items (reflecting patterns of items that progress from concrete to abstract, simple to complex, familiar to less familiar, and factual-based to higher order questions); 5) pilot testing and interviewing with elementary

and secondary students from Columbus, Ohio; and 6) analysis and revision.

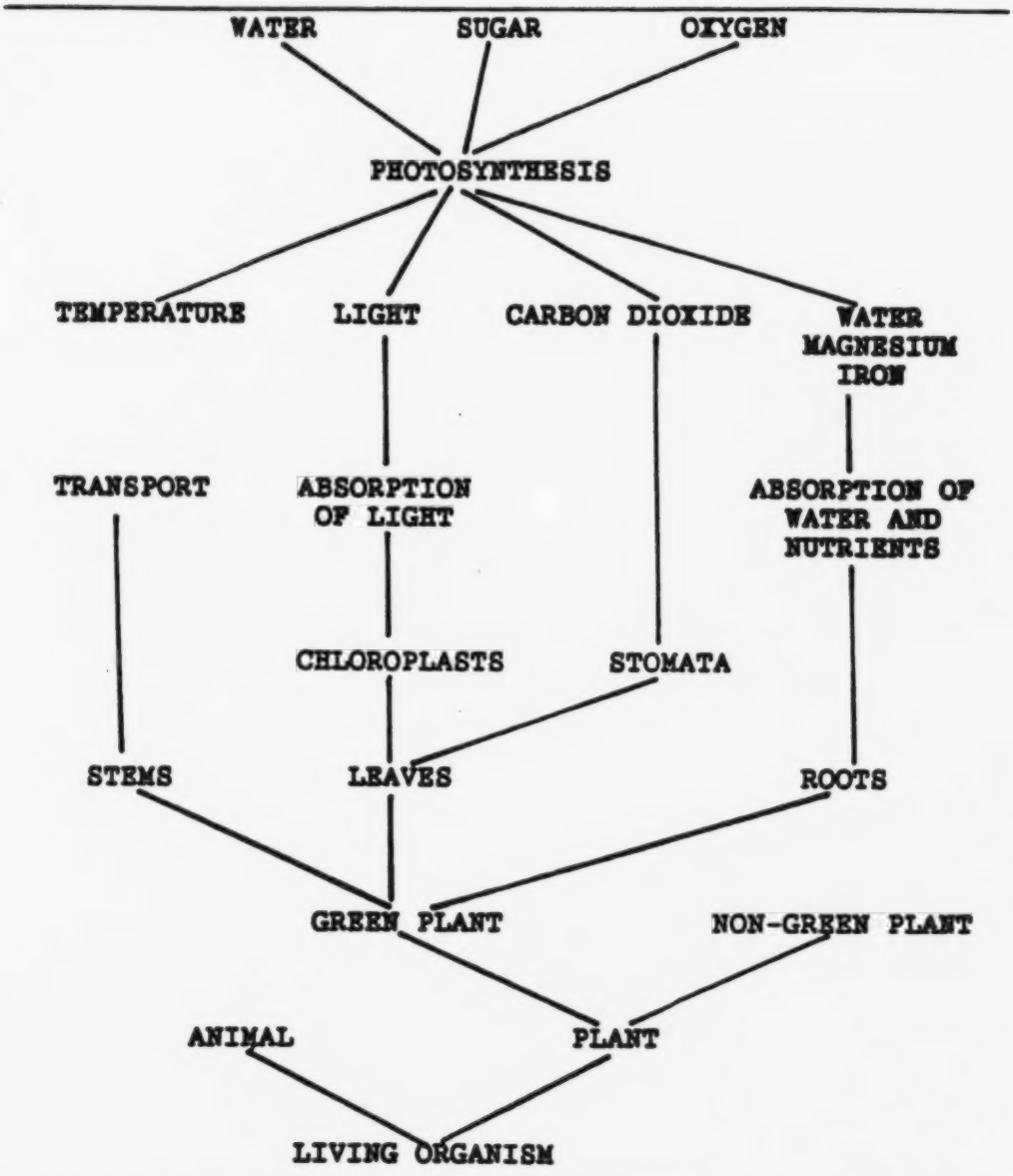

Figure 1: CONCEPT HIERARCHY AND SUBORDINATE CONCEPTS

The PCT was intended to measure the six groups of concepts related to photosynthesis. The divisions focused on: 1) plant and animal identification; 2) characteristics of green plants; 3) plant structure and its corresponding functions; 4) conditions for photosynthetic processes; 5) photosynthetic processes; and 6) photosynthetic products.

The draft of the Photosynthesis Concepts Test (PCT) was reviewed by faculty members from The Ohio State University's Department of Educational Studies, Science Education Section and a professor of botany. The ideas and suggestions expressed by these individuals were incorporated in the draft during the period of construction. This instrument was then administered to three groups of elementary and secondary students, that is, a fourth-grade class (n-20), an integrated class of fourth- and fifth-grade students (n-20) and an eighth-grade class (n-20). Interviews were held with 12 of the participating students, six from the fourth-grade class and six from the eighth-grade class.

Through the administration of the PCT instrument, it was found that: 1) student achievement increased from the fourth grade to the eighth grade; 2) student achievement was higher on items that were simple and familiar concepts than on items that were logically complex and less familiar concepts; and 3) students' misconceptions related to photosynthesis could be identified by the test as well as by

interview technique. In addition, the analysis of interview protocols provided students' ideas regarding six clusters of concepts related to photosynthesis. Using these results, changes in the content and format of the items of the draft of the Photosynthesis Concepts Test instrument were made. An example is item #5; three of the five alternative answers came from students' misconceptions discovered through the pilot test interview (Figure 2).

5.What are the functions of plant root?
(Please circle all of the correct answers.)
A.absorb water.
*B.absorb the air which is immersed into the soil.
C.absorb the nutrients which are dissolved in water.
*D.capture the light which penetrate into the soil.
*E.capture the warmth from the soil to keep plants warm.

---

* Misconceptions which students showed in the interview.

Figure 2: ITEM #5 OF THE PCT INSTRUMENT. Alternative answers B, D and E were included in the PCT, which came from students' responses in the pilot study.

Modifications to the PCT instrument included changes in format, wording, and actual items in the instrument. However, the concept strands that were initially targeted for study remained the same. More than one item was assigned to each concept cluster to measure students' understanding in each concept cluster.

3.3.1.2 Logical Reasoning Skills on the PCT

All the items of the PCT were classified based on logical reasoning ability and Bloom's Taxonomy level (Table 1). These classifications were reviewed by faculty members from The Ohio State University's Department of Educational Studies, Science Education Section. A pilot study was also conducted before final classification of the items. After the pilot study and the analysis of textbook emphasis, the items were reclassified. Twenty four items appeared to be classified in the correct pattern. Ten items did not appear to be classified correctly. Items listed in the Table 2 are the 10 items. Most reclassifications required a higher level of reasoning.

Table 1

CLASSIFICATION OF THE PHOTOSYNTHESIS CONCEPTS TEST ITEMS BY LOGICAL REASONING AND BLOOM'S TAXONOMY

CLUSTER	KNOWLEDGE	COMPREHENSION	APPLICATION
CLUSTER ONE	#1(CM*-C**) #2(CM-C)		
CLUSTER TWO	#3(CM-C) #4(CM,CR-T) #7(CM,CR-T)		
CLUSTER THREE	#5(CM,CR-T) #6(CM,CR-F)		
CLUSTER FOUR	#13a(CV,CR-C) #21a(CR-C) #21c(CR-C) #21d(cr-C)	#13b(CV,CR-T) #14b(CV,CR-T) #21e(CR-T) #21f(CR-T) #21g(CR-T) #21i(CR-T)	#14a(CV,CR-T) #17(CR-F) #18a(CV,CR-F) #18b(CV,CR-F) #21b(CR-F) #21h(CR-F) #21j(CR-F)
CLUSTER FIVE	#16(CR-T)	#15(CR-T) #19a(CR-T) #19b(CR-T)	#9(CV,CR-F) #10(CR-F) #11(CR-T) #12(CR-T)
CLUSTER SIX	#8(CR-T)	#20(CR-F)	

* indicates reasoning type:
CM-combinatorial reasoning
CV-control of variables
CR-correlational reasoning

** indicates reasoning level:
C-concrete level
T-transitional level
F-formal level

Table 2

RECLASSIFIED ITEMS OF THE PCT ITEMS@

ITEM	PILOT	REVISED	REASONS
#4	CM-C * **	CM,CR-T	Higher than concrete level is required to understand the concept of making food by itself.
#5	CM,CR-C	CM,CR-T	Higher than concrete level is required to relate the structure of root to its function. (nutrient dissolved in water vs. light, air and warmth)
#6	CM-C	CM,CR-F	Formal reasoning is required to identify the invisible functions of leaves such as 'producing sugar' and 'absorbing air'.
#7	CM-C	CM,CR-T	the same reason as in item #4 above
#14a	CV,CR-F	CV,CR-T	to be consistent to items #4 and #7, in which the same concept as in items #14a/b is asked
#14b	CV,CR-F	CV,CR-T	the same reason as item #14a
#13a	APPLY ***	KNOW	Students are so familiar with the problem and the concept in the question. It has been taught as knowledge item.
#15	CR-C KNOW	CR-T COMPREHEND	requires interpretation of the procedure of the item in terms of the purpose of the experiment
#18a	COMPRE- HEND	APPLY	requires the process of applying the property of light to entirely new situation
#18b	COMPRE- HEND	APPLY	the same reason as item #18a

@ A total of 34 items classified after pilot before

Korean research. Twenty four items appeared to be consistent. Ten items did not appear to be classified consistently. Most reclassifications required higher level of reasoning.

* indicates reasoning type; CM-combinatorial reasoning, CV-control of variables, and CR-correlational reasoning.

** indicates reasoning level; C-concrete level, T-transitional level, and F-formal level.

*** indicates the lower three levels of Bloom's taxonomy; KNOW-knowledge, COMPREHEND-comprehension, and APPLY-application.

3.3.2 DESCRIPTION OF THE PLRT

An instrument was developed by the author to assess students' reasoning skills directly involved in the PCT. The procedures included in the development of the Piagetian Logical Reasoning Test (PLRT) were: 1) identification of reasoning skills involved in the PCT ; 2) establishment of applications characteristic of each reasoning skill at each developmental level; and 3) construction of items based on the applications.

Three Piagetian logical reasoning skills-- control of variables, combinatorial reasoning, and correlational reasoning--were found to be involved in the PCT. As to the reasoning skills, three Piagetian developmental levels--concrete, transitional, and formal--were applied. According to the argument that each developmental level has its own unique applications in terms of 'reasoning patterns'

(Karplus, 1979), the general and reasoning-specific applications of three reasoning skills were established at each developmental level (Table 3).

Based on these general and reasoning-specific applications, a total of 12 items were constructed. As far as the context of each item is concerned, it was intended to be content-free or very basic and familiar biology content in order to eliminate any effect of knowledge on the failure or success of the items. The items were intended to assess the three reasoning skills: that is, control of variables (items #2, #5, #9 and #10) combinatorial reasoning (items #3, #5, #6 and #11) and correlational reasoning (items #1, #4, #7 #8-1 and #8-2). Item #5 was assumed to be involved in both control of variables and combinatorial reasoning. The items were also intended to cover three reasoning levels on each reasoning skill--concrete level, transitional level, and formal level.

Table 3

GENERAL AND REASONING-SPECIFIC APPLICATIONS OF REASONING PATTERNS

CONCRETE	TRANSITIONAL	FORMAL
1.GENERAL APPLICATIONS		
cannot make simple links between successive statements in propositional expressions.	can make simple links, but cannot explain the logic	can reason hypothetically, i.e., with the form, if...then ...therefore.
(Piaget, 1958; Lawson, 1979;and Lawson and Nordland, 1976)		
A. CV-specific applications		
cannot recognize or understand the assumptions which are under CV--that is, the exclusion of the other inoperant links than the operant variable.	cannot recognize hidden assumptions of CV certainly. So include some inoperant links in drawing conclusions.	can apply the rule that unless the inoperant variables remain equal or constant, the experiment will not prove the effect of the operant variable.
B. CM-specific applications		
can make one-by-one correspondences between objects.	can apply two-by-two or three-by-three combinations empirically, but not under systematic hypotheses.	can consider all possible combinations of variables considered in forming hypotheses.
C. CR-specific applications		
can draw simple causal relations between objects and events. "If man is deprived of air, he will die"	can draw simple logical relations between intangible variables.	can validate hypothetical causal propositions, and correlations between confirming and disconfirming cases should be made.

(Table 3 continued)

2.GENERAL APPLICATIONS		
must use objects, familiar events or actions and observational data.	can apply verbal description of objects, familiar action and observable properties.	can apply concrete or abstract concepts, relationships, intangible properties and theories.
(Karplus, 1979)		
A.Specific applications		
can reason with things which are more distinct, more clear, and more simple	←----------→	can reason with things which are less distinct, less clear, and less familiar
3.GENERAL APPLICATIONS		
can establish one-by-one correspondences between any two sets of data.	can establish combinations of two or three variables on solving problems.	can apply systematic methods in the use of complex n by n combinations.
(Piaget, 1958; Raven and Guerin, 1975; and Karplus, 1979)		
A.CV-specific applications		
can classify and match each of operant and inoperant variables to occurrence of a phenomenon randomly.	can classify and match each of operant and inoperant variables to occurrence of a phenomenon with partial systematic intentions.	can separate out all the potential factors for equalization and neutralization.
B. CR-specific applications		
can establish interactional or causal rela-	can compare two groups or four groups of data	can use the concepts of probability and proportion to find

(Table 3 continued)

tionships between objects and events. "Because the bar is longer, it can go down better." (from Piaget's Bending Rods experiment, 1958)	based upon one or two criteria. "There are more red fat than green fat, and more green thin than red thin." (Adi et al., 1978)	correlations among a group of data. "Seven out of 10 large beans are black, but five out of six small beans are white."
4.GENERAL APPLICATIONS		
cannot apply his or her metacognition to his/her reasoning.	can apply his/her metacognition partially to his/her reasoning.	can apply his/her metacognition to his/her reasoning.
A.CV and CR-specific applications		
simply establish given correspondences empirically, so not consistent to drawing conclusions. (Piaget, 1958)	can recognize the inconsistency in conclusions, but still confused by mixing inoperant variables. (Piaget, 1958)	when s/he is confronted with inconsistency in her/his reasoning, return to assumption or hypothesis, and remove the inconsistency. (Piaget, 1958)
B.CM-specific applications		
no combinatorial scheme.	have partial combinatorial scheme.	can apply her/his combinatorial scheme for proving her/his reasoning.

CV-control of variables
CM-combinatorial reasoning
CR-correlational reasoning

3.3.3 VALIDITY AND RELIABILITY OF THE PCT

The validity of the Photosynthesis Concepts Test instrument is discussed below in terms of content and reasoning ability. Then, reliability of the instrument is discussed in terms of its internal consistency and repeated use reliability.

3.3.3.1 Validity-Content

First of all, the PCT instrument was constructed based on the elementary and junior high science textbooks currently being used by the population. The high degree of coverage of the test items by the textbooks was revealed through the comparison of the items with science textbooks of fourth through eighth grades. The content of the test was reviewed by a panel of The Ohio State University's Departments of Educational Studies, Science Education Section, and a professor of botany and judged as valid.

From the pilot study and the dissertation study, it was shown that people who have had more instruction scored higher on the test than those who have had less (see Tables 41 and 42 in Chapter Four); and it was found that they scored higher on more familiar items and lower on less familiar and more abstract items.

Through the procedures above, the content and the discriminant validities of the PCT were established.

3.3.3.2 Validity-Logical Reasoning Required

It was assumed that lack of achievement on the PCT items could be due to lack of knowledge, and also to lack of skills to organize concepts and to apply the knowledge to problem situations. The author developed items for the PCT which included concrete to formal reasoning requirements. The assignment of the items by reasoning level, as shown in Table 1, was judged valid by faculty members of The Ohio State University's Department of Educational Studies, Science Education Section.

Both the pilot and the dissertation results showed that: 1)the scores on the PCT tended to agree with the scores as predicted by the students' logical reasoning; 2)formal thinkers did better on the PCT items requiring transitional and formal level thinking; and 3)concrete thinkers did not do as well on items requiring transitional and formal level thinking.

3.3.3.3 Summary of Validity

It is important that instruments used in misconception study measure both concept understanding and logical reasoning dimensions for accurate interpretation of student achievement. Data of the pilot study and the dissertation study supported that the PCT was valid and could discriminate on both content and logical reasoning.

3.3.3.4 Reliability-Internal Consistency

The internal consistencies of the PCT were calculated by the reliability procedure of SPSSx (2nd ed., 1986) which computed coefficient alphas. The coefficient alphas of the PCT were 0.58 for the fifth-grade students (n=191) and 0.75 for the eighth-grade students (n=213).

According to Cronbach (1960), internal reliability is influenced by a test's length, homogeneity, difficulty, and spreadness and skewness. Each of these variables are considered below.

a.Length

A longer test yields higher reliability. The 34-item PCT instrument was assumed to be sufficiently long by most standards.

b.Homogeneity

A single factor test will usually yield a higher internal reliability score. This instrument has several parts and factors to account for different levels of knowledge and different levels of logical reasonings. Hence, the instrument is not composed of a single factor, and does not have homogeneity.

c.Difficulty

The test was designed to measure mastery of several concrete concepts related to photosynthesis, as well as formal reasoning related to photosynthesis. Therefore, the

instrument had some very easy items and some very difficult items. This characteristic will tend to reduce internal reliability. However, such features are desirable for the purpose for which the PCT instrument was designed.

d. Spread and Skewness

Scores obtained tend to be skewed with relatively few high scores and substantially more low scores. Such score distributions as obtained in the study tends to reduce internal reliability scores.

3.3.3.5 Reliability-Repeated Use (Stability)

The sample in the pilot study consisted of fourth-, fifth- and eighth-grade American students. The repeated use of the PCT with these groups showed that higher grade students scored higher according to the logical direction of easy to difficult items.

Comparison of the pilot study group with Korean sample presented a similar distribution of the scores. The test appeared to yield similar results with similar grades of students.

3.3.4 VALIDITY AND RELIABILITY OF THE PLRT

3.3.4.1 Validity of the PLRT

Faculty members of The Ohio State University's Departments of Educational Studies, Science Education Section and a professor of botany. were given the PLRT and the table of general and specific applications of reasoning patterns. All of the members judged the instrument to be appropriate for assessing the applications.

The dissertation data revealed that the group means of the items were categorized into three groups-- concrete, transitional, and formal levels. In addition, eighth-grade students scored higher on the transitional and formal level items of the PLRT than fifth-grade students. Forty-five percent of fifth-grade students and 75 percent of eighth-grade students were at the transitional level. The values were consistent with Maynard's data (1979) on the percentages of students at each reasoning level. Such results showed that the PLRT instrument had construct validity.

3.3.4.2 Reliability of the PLRT

The reliability of the PLRT was calculated by the reliability procedure of the SPSSx (2nd ed., 1986) which computed coefficient alphas. The reliabilities of the PLRT were .70 for the fifth-grade students (n=191) and .64 for the eighth-grade students (n=213).

3.3.5 DESCRIPTION OF THE QUESTIONNAIRE

The questionnaire was designed to gather information pertaining to student background and attitudes toward science (Appendix E). The major variables gathered by the questionnaire were as follows: 1) the educational level of parents; 2) science grades; 3) attitudes toward science classes; 4) extracurricular activities; 5) science learning; 6) science as favorite subject; and 7) science learning style. A total of 17 items were constructed for the questionnaire. The 17 items contained over 60 variables for analysis.

3.3.6 TRANSLATION OF THE INSTRUMENTS INTO KOREAN

After completing construction of English version of the three instruments, translation of the instruments into Korean was performed by the author. Scores on items and sample interview showed that Korean students understood the instruments. The translator is a Korean, and knows the language. Minor language changes were made to be certain that Korean students would understand.

3.4 TEXTBOOK ANALYSIS

The intended curriculum was analyzed with respect to the emphasis biological science concepts received in the textbooks which were being used at fourth through eighth grades. In Korea, only one intended curriculum in science is established by the Ministry of Education.

The biology sections of the science textbooks were analyzed in terms of the degree of coverage of contents related to the PCT items. The textbook emphasis was rated by class hours intended to cover the contents related to the test items. The textbook emphasis was rated under three categories of presentation modes--verbal presentation only, pictures or diagrams given plus verbal presentation, and hands-on activities described. Only the total scores for fourth and fifth grades and for fourth through eighth grades were used in this study. Table 4 presents textbook emphasis related to each item of the PCT from fourth to eighth grades. It is possible that the instructional emphasis might vary from the textbook emphasis. Adding this variable in another study would permit detecting whether the textbook emphasis and the instructional emphasis had the same impact, or if different, whether the differences could be detected.

Table 4

EMPHASIS ANALYSIS OF KOREAN SCIENCE TEXTBOOKS AT INTERMEDIATE AND JUNIOR HIGH LEVELS

ITEM	Gr.4			Gr.5			STL	Gr.6			Gr.7			Gr.8			TL
	V	P	H	V	P	H		V	P	H	V	P	H	V	P	H	
#1	1	6	10	0	7	3	27	0	0	0	0	9	6	0	0	0	42
#2	1	4	5	0	7	3	20	0	0	0	0	6	8	0	0	0	34
#3	0	0	0	0	1	4	5	0	0	0	0	2	0	0	1	0	8
#4	0	0	0	0	0	3	3	0	1	0	0	1	0	0	0	0	5
#5	0	1	2	0	1	1	5	0	0	0	0	1	0	0	1	0	7
#6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
#7	0	0	0	0	0	2	2	0	0	0	0	1	0	1	1	1	6
#8	0	0	0	0	0	2	2	0	0	0	0	0	0	0	3	0	5
#9	0	0	0	0	0	1	1	0	0	2	0	0	0	2	0	0	5
#10	0	0	0	0	0	2	2	0	0	0	0	0	0	0	3	0	5
#11	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	1	5
#12	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	1	5
#13a	0	0	5	0	0	4	9	0	0	0	0	0	0	0	1	0	10
#13b	0	0	5	0	0	4	9	0	0	0	0	0	0	0	1	0	10
#14a	0	0	3	0	0	3	6	0	0	0	0	0	0	0	1	0	7
#14b	0	0	3	0	0	3	6	0	0	0	0	0	0	0	1	0	7
#15	0	0	0	0	0	0	0	0	0	2	0	0	0	3	1	0	6
#16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	5
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
#18a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19a	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	4
#19b	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	4
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
#21a	0	0	0	0	1	2	3	0	0	0	0	1	0	0	1	2	7
#21b	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	3
#21c	0	0	0	0	0	4	4	0	0	0	0	1	0	0	1	1	7
#21d	0	0	0	0	1	0	1	0	0	0	0	1	0	0	2	3	7
#21e	0	0	0	0	0	0	0	0	0	2	0	1	0	0	2	1	6
#21f	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	5
#21g	0	0	0	0	0	0	0	0	0	2	0	1	0	3	0	0	6
#21h	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	3
#21i	0	0	0	0	0	0	0	0	0	2	0	1	0	3	0	0	6
#21j	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1

STL:sum of fourth and fifth grades
TL:sum of fourth through eighth grades
V:verbal presentation only
P:pictures or graphs given plus verbal presentation
H:hands-on activity described or illustrated

NOTE:The above values indicate the estimates of textbook emphasis, that is, the class hours which

(Table 4 continued)
are intended to be spent on covering the content related to each item.

3.5 DATA COLLECTION

Data were collected for a total of 440 students (201 elementary students and 239 junior high students) on their knowledge of concepts related to photosynthesis by the Photosynthesis Concepts Test, on their logical reasoning ability by the Piagetian Logical Reasoning Test, and on their family background and attitudes toward science by the Questionnaire.

The class teachers administered the three instruments for two consecutive class periods in the following order: the Questionnaire, the PCT, and the PLRT. In the elementary schools, science subject was found to be graded by three levels, not by five levels as indicated in the Questionnaire. So the author recategorized science grades A and B to UPPER, C to MIDDLE, and D and F to LOWER level for the elementary students before administration.

3.6 ANALYSIS OF DATA

3.6.1 INTRODUCTION

Efforts to find the hypothesized patterns among the variables included in the three instruments were made through the analysis. The major concern was to determine what variables could explain students' misconceptions of the concepts related to photosynthesis.

3.6.2 PRIMARY ANALYSIS

First of all, all possible variables were coded dichotomously into the categories. The Frequency procedure and Pearson Correlation procedure of SPSSx were employed for descriptive analysis of the data. The descriptive analyses were used 1) for selecting salient variables for further analysis, that is, not too low frequency, nor strongly skewed, nor with extreme degree of kurtosis in a category and 2) for finding important variables which had significant correlations with the variables related to the hypotheses.

3.6.3 SECONDARY ANALYSIS

After scrutinizing the correlations with some significant level among the variables, selected variables were subjected to further analysis. Correlations of the selected variables were sought by coding the variables with weights, by assigning a numerical value to each of the cat-

egories in the weighted variable. The weight-coded variables were also subjected to an SPSSx regression analysis to find the variance of the BCT score accounted for by these variables.

3.6.4 TEXTBOOK EMPHASIS AND THE ITEM ACHIEVEMENT

The literature review indicated that the curriculum or instructional emphasis was one of the most significant variables related to student achievement in the area of science and mathematics. The null hypothesis that there was no significant relationship between students' understandings of concepts and the textbook emphasis on the concepts was checked by correlation analysis and Chi-square test. The one-sample Chi-square test was used to obtain information on consistency of textbook emphasis with its expected or predicted achievement (Leach, 1979).

CHAPTER IV

RESULTS

There are five sections in this chapter. The first section presents frequencies of the variables addressed in this study for the purpose of showing the samples' characteristics. The second and the third sections present information about the students' logical reasoning ability and understanding of the concept of photosynthesis, respectively. The fourth section reports correlation findings between textbook emphasis and the PCT items. The fifth section reports the results of correlation and regression analyses with selected variables.

4.1 SAMPLE CHARACTERISTICS

Descriptive data for population, educational level of parents, science grades, attitudes toward science classes, extracurricular activities, science learning, science as favorite subject, and science learning style are presented below.

4.1.1 POPULATION

The numbers of participating students by school, class, and sex are shown in Table 5.

Table 5

NUMBERS OF STUDENTS IN SAMPLE BY GRADE, SEX AND CLASS

SCHOOL		GRADE	SEX	STUDENTS IN CLASS
ELEMENTARY SCHOOL 1	CLASS ONE	5	M	30
		5	F	21
	CLASS TWO	5	M	28
		5	F	23
ELEMENTARY SCHOOL 2	CLASS ONE	5	M	25
		5	F	24
	CLASS TWO	5	M	29
		5	F	21
SECONDARY SCHOOL 1	CLASS ONE	8	M	59
		8	F	0
	CLASS TWO	8	M	56
		8	F	0
SECONDARY SCHOOL 2	CLASS ONE	8	M	0
		8	F	62
	CLASS TWO	8	M	0
		8	F	62

M MALE
F FEMALE

Table 6 shows the total numbers of the participating students by sex and grade.

Table 6

NUMBERS OF STUDENTS IN SAMPLE BY SEX AND GRADE

	GRADE 5	GRADE 8	TOTAL
MALE	112	115	227
FEMALE	89	124	213
TOTAL	201	239	440

4.1.2 EDUCATIONAL LEVEL OF PARENTS

4.1.2.1 Educational Level of Fathers

The highest educational attainments of fathers of fifth-grade students are listed in Table 7. A majority of the fathers in both schools had attained a college level education (81 percent). Very few fathers had only an elementary school level of education (2 percent).

Table 7

HIGHEST EDUCATIONAL LEVEL OF FATHERS OF FIFTH-GRADE STUDENTS

EDUCATIONAL LEVEL	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.POST COLLEGE	8	15.7	10	19.6	10	20.4	10	20.0	38	18.9
2.COLLEGE	28	54.9	27	52.9	32	65.3	37	74.0	124	61.7
3.SENIOR HIGH	9	17.6	8	15.7	6	12.2	2	4.0	25	12.4
4.JUNIOR HIGH	1	2.0	5	9.8	0	0.0	0	0.0	6	3.0
5.ELEMENTARY	1	2.0	1	2.0	1	2.0	1	2.0	4	2.0
6.MISSING DATA	4	7.8	0	0.0	0	0.0	0	0.0	4	2.0

The highest educational attainments of fathers of eighth-grade students are listed in Table 8. About 32 percent of the fathers of these students had completed college, while about eight percent of the fathers had completed only elementary school.

The Scheffe test was used to compare the educational level of fathers of two grade levels among the four schools. There was a significant difference at the 0.01 level in each comparison between the two elementary and the two junior high schools, but there were no significant differences at the 0.01 level between the two schools of the same grade level. The educational level of fathers of the younger group was significantly higher at the 0.01 level than that of the older group. The educational level of adults in Korea has increased substantially during the past decade (Ministry of Education, 1986).

Table 8

HIGHEST EDUCATIONAL LEVEL OF FATHERS OF EIGHTH-GRADE STUDENTS

EDUCATIONAL LEVEL	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n=59		CLASS 2 n=56		CLASS 3 n=62		CLASS 4 n=62		n=239	
	n	%	n	%	n	%	n	%	n	%
1. POST COLLEGE	4	6.8	6	10.7	1	1.6	2	3.2	13	5.4
2. COLLEGE	15	25.4	18	32.1	23	37.1	8	12.9	64	26.8
3. SENIOR HIGH	24	40.7	15	26.8	20	32.3	27	43.5	86	36.0
4. JUNIOR HIGH	10	16.9	12	21.4	14	22.6	20	32.3	56	23.4
5. ELEMENTARY	6	10.2	3	5.4	4	6.5	5	8.1	18	7.5
6. MISSING DATA	0	0.0	2	3.6	0	0.0	0	0.0	2	0.8

4.1.2.2 Educational Level of Mothers

The highest educational attainments of mothers of fifth-grade students are listed in Table 9. About 61 percent of mothers of these students had attained a college level education. Very few mothers had only an elementary school level of education (2.5 percent).

Table 9

HIGHEST EDUCATIONAL LEVEL OF MOTHERS OF FIFTH-GRADE STUDENTS

EDUCATIONAL LEVEL	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.POST COLLEGE	0	0.0	5	9.8	6	12.2	7	14.0	18	9.0
2.COLLEGE	21	41.2	22	43.1	29	59.2	32	64.0	104	51.7
3.SENIOR HIGH	24	47.1	18	35.3	12	24.5	10	20.0	64	31.8
4.JUNIOR HIGH	2	3.9	5	9.8	1	2.0	1	2.0	9	4.5
5.ELEMENTARY	3	5.9	1	2.0	1	2.0	0	0.0	5	2.5
6.MISSING DATA	1	2.0	0	0.0	0	0.0	0	0.0	1	0.5

The highest educational attainments of mothers of eighth-grade students are listed in Table 10. About 12 percent of the mothers of these students had completed college, while about 19 percent of the mothers had completed only elementary school.

The Scheffe test was used to compare the educational level of mothers of the two grade levels among the four

schools. There was a significant difference at the 0.01 level in each comparison between the two elementary and the two junior-high schools, and between the two elementary schools, but no significant difference at the 0.01 level between the two junior-high schools. The educational level of mothers of the younger group was significantly higher than that of the older group. While the mothers were a well-educated group, this educational attainment level was not as high as was the fathers.

Table 10

HIGHEST EDUCATIONAL LEVEL OF MOTHERS OF EIGHTH-GRADE STUDENTS

EDUCATIONAL LEVEL	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n=59		CLASS 2 n=56		CLASS 3 n=62		CLASS 4 n=62		n=239	
	n	%	n	%	n	%	n	%	n	%
1.POST COLLEGE	0	0.0	2	3.6	0	0.0	0	0.0	2	0.8
2.COLLEGE	6	10.2	8	14.3	6	9.7	6	9.7	26	10.9
3.SENIOR HIGH	26	44.1	21	37.5	29	46.8	23	37.1	99	41.4
4.JUNIOR HIGH	18	30.5	16	28.6	17	27.4	15	24.2	66	27.6
5.ELEMENTARY	9	15.3	9	16.1	10	16.1	17	27.4	45	18.8
6.MISSING DATA	0	0.0	0	0.0	0	0.0	1	1.6	1	0.4

4.1.3 SCIENCE GRADE FOR FIFTH-GRADE STUDENTS

Table 11 presents data on fifth-grade students' grades in science this year (1987). A large majority of fifth-grade students (77 percent) reported receiving high grades this year; only three percent reported they received low grades. It is obvious that there is relatively little discrimination in grading at this level for these students.

Table 11

SCIENCE GRADES REPORTED BY FIFTH-GRADE STUDENTS THIS YEAR (1987)*

SCIENCE GRADE	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.HIGH	40	78.4	29	56.9	45	91.8	40	80.0	154	76.6
2.AVERAGE	8	15.7	21	41.2	4	8.2	7	14.0	40	19.9
3.LOW	2	3.9	1	2.0	0	0.0	3	6.0	6	3.0
4.MISSING DATA	1	2.0	0	0.0	0	0.0	0	0.0	1	0.5

* Three levels are possible: high, average and low.

Table 12 presents data on fifth-grade students' average grades in science in previous years. A large majority of fifth-grade students (87 percent) reported receiving high grades in previous years; only four percent reported they received low grades. Previous average grades appear similar to grades this year (1987).

Table 12

AVERAGE SCIENCE GRADES REPORTED BY FIFTH-GRADE STUDENTS IN PREVIOUS YEARS*

SCIENCE GRADE	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.HIGH	44	86.3	40	78.4	46	93.9	45	90.0	175	87.1
2.AVERAGE	4	7.8	9	17.6	3	6.1	2	4.0	18	9.0
3.LOW	3	5.9	2	3.9	0	0.0	3	6.0	8	4.0

* Three levels are possible: high, average and low.

4.1.4 COMPARISON OF SCIENCE WITH OTHER SUBJECTS

Table 13 shows that most fifth-grade students (66 percent) reported the same grades in science as in other subjects this year. About 22 percent reported higher science grades and about 12 percent reported lower. Grading patterns as reported by students for other subjects appear to be similar to those for science this year (1987).

Table 13

COMPARISON OF FIFTH-GRADE STUDENTS' SCIENCE GRADES WITH OTHER SUBJECT GRADES THIS YEAR (1987)

COMPARISON*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.	3	5.9	2	3.9	2	4.1	1	2.0	8	4.0
2.	11	21.6	7	13.7	13	26.5	5	10.0	36	17.9
3.	32	62.7	36	70.6	31	63.3	33	66.0	132	65.7
4.	3	5.9	5	9.8	1	2.0	7	14.0	16	8.0
5.	1	2.0	1	2.0	2	4.1	4	8.0	8	4.0
6.	1	2.0	0	0.0	0	0.0	0	0.0	1	0.5

*1. science grades highest of all grades
2. science grades higher than most other grades
3. science grades about the same as other grades
4. science grades lower than most other grades
5. science grades lowest of all grades
6. missing data

Table 14 indicates that most fifth-grade students reported the same average grades in science as in other subjects in previous years. However, 37 percent reported higher science grades and only five percent reported lower.

Table 14

COMPARISON OF FIFTH-GRADE STUDENTS' PREVIOUS SCIENCE GRADES WITH OTHER SUBJECT GRADES

COMPARISON*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.	8	15.7	12	23.5	3	6.1	5	10.0	28	13.9
2.	14	27.5	11	21.6	15	30.6	8	16.0	48	23.9
3.	27	52.9	26	51.0	29	59.2	31	62.0	113	56.2
4.	0	0.0	2	3.9	2	4.1	5	10.0	9	4.5
5.	2	3.9	0	0.0	0	0.0	1	2.0	3	1.5

*1. science grades highest of all grades
2. science grades higher than most other grades
3. science grades about the same as other grades
4. science grades lower than most other grades
5. science grades lowest of all grades

4.1.5 SCIENCE GRADE FOR EIGHTH-GRADE STUDENTS

Table 15 shows that 52 percent of eighth-grade students received science grades of A or B this year; 29 percent received C; and 18 percent received D or F. The data are skewed toward higher science grades. More higher grades (A and B) were given than lower grades (D and F).

Table 16 shows a similar pattern of average grades reported for science in previous years.

Table 15

GRADES REPORTED BY EIGHTH-GRADE STUDENTS FOR SCIENCE THIS YEAR (1987)

SCIENCE GRADE	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.A	16	27.1	13	23.2	10	16.1	8	12.9	47	19.7
2.B	20	33.9	21	37.5	18	29.0	18	29.0	77	32.2
3.C	12	20.3	17	30.4	16	25.8	24	38.7	69	28.9
4.D	10	16.9	4	7.1	12	19.4	9	14.5	35	14.6
5.F	1	1.7	1	1.8	6	9.7	1	1.6	9	3.8
6.MISSING DATA	0	0.0	0	0.0	0	0.0	2	3.2	2	0.8

Table 16

AVERAGE GRADES REPORTED BY EIGHTH-GRADE STUDENTS FOR SCIENCE IN PREVIOUS YEARS

SCIENCE GRADE	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.A	13	22.0	15	26.8	7	11.3	9	14.5	44	18.4
2.B	21	35.6	18	32.1	18	29.0	21	33.9	78	32.6
3.C	19	32.2	16	28.6	23	37.1	23	37.1	81	33.9
4.D	5	8.5	2	3.6	11	17.7	4	6.5	22	9.2
5.F	1	1.7	4	7.1	3	4.8	2	3.2	10	4.2
6.MISSING DATA	0	0.0	1	1.8	0	0.0	3	4.8	4	1.7

4.1.6 COMPARISON OF SCIENCE FOR EIGHTH-GRADE STUDENTS WITH OTHER SUBJECTS

Table 17 shows that most eighth-grade students (60 percent) reported the same grades in science as in other subjects this year. About 23 percent reported higher science grades and about 15 percent reported lower. Grading patterns for other subjects appear to be similar to those for science this year.

Table 17

COMPARISON OF EIGHTH-GRADE STUDENTS' SCIENCE GRADES WITH OTHER SUBJECT GRADES THIS YEAR (1987)

COMPARISON*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.	5	8.5	2	3.6	2	3.2	1	1.6	10	4.2
2.	17	28.8	16	28.6	7	11.3	6	9.7	46	19.2
3.	28	47.5	35	62.5	38	61.3	42	67.7	143	59.8
4.	9	15.3	2	3.6	12	19.4	12	19.4	35	14.6
5.	0	0.0	1	1.8	3	4.8	1	1.6	5	2.1

*1. science grades highest of all grades
2. science grades higher than most other grades
3. science grades about the same as other grades
4. science grades lower than most other grades
5. science grades lowest of all grades

Table 18 shows a similar pattern for science grades compared to other grades in previous years. A majority of the students reported similar grades, though some reported higher and lower science grades.

Table 18

COMPARISON OF EIGHTH-GRADE STUDENTS' PREVIOUS AVERAGE SCIENCE GRADES WITH OTHER SUBJECT GRADES

COMPARISON*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.	5	8.5	4	7.1	2	3.2	1	1.6	12	5.0
2.	10	16.9	15	26.8	6	9.7	14	22.6	45	18.8
3.	35	59.3	26	46.4	41	66.1	37	59.7	139	58.2
4.	9	15.3	11	19.6	11	17.7	9	14.5	40	16.7
5.	0	0.0	0	0.0	2	3.2	1	1.6	3	1.3

*1. science grades highest of all grades
2. science grades higher than most other grades
3. science grades about the same as other grades
4. science grades lower than most other grades
5. science grades lowest of all grades

4.1.7 SCIENCE LEARNING

Table 19 indicates how much fifth-grade students believed they had learned in science this year (1987). Sixty-eight percent felt they learned a lot; only five percent felt they learned very little. These data correspond closely to science grades received by fifth-grade students (see Table 11).

Table 20 presents similar data for eighth-grade students. About 40 percent felt that they learned a lot. Sixteen percent felt they learned very little. Their self-reported science learning is closely related to science grades received by eighth-grade students(see Table 15).

Table 19

EXTENT TO WHICH FIFTH-GRADE STUDENTS THOUGHT THEY LEARNED SCIENCE THIS YEAR (1987)

SCIENCE LEARNING	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.A GREAT DEAL	11	21.6	9	17.6	9	18.4	3	6.0	32	15.9
2.QUITE A LOT	29	56.9	25	49.0	30	61.2	21	42.0	105	52.2
3.AVERAGE	9	17.6	13	25.5	10	20.4	20	40.0	52	25.9
4.VERY LITTLE	1	2.0	3	5.9	0	0.0	6	12.0	10	5.0
5.NOTHING	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.MISSING DATA	1	2.0	1	2.0	0	0.0	0	0.0	2	1.0

Table 20

EXTENT TO WHICH EIGHTH-GRADE STUDENTS THOUGHT THEY LEARNED SCIENCE THIS YEAR (1987)

SCIENCE LEARNING	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.A GREAT DEAL	4	6.8	2	3.6	2	3.2	1	1.6	9	3.8
2.QUITE A LOT	20	33.9	28	50.6	18	29.0	19	30.6	85	35.6
3.AVERAGE	31	52.5	18	32.1	31	50.0	28	45.2	108	45.2
4.VERY LITTLE	4	6.8	8	14.3	10	16.1	14	22.6	36	15.1
5.NOTHING	0	0.0	0	0.0	1	1.6	0	0.0	1	0.4

4.1.8 ATTITUDES TOWARD SCIENCE

This subsection includes information about attitude toward science class and science as favorite subject, and interest in taking science courses in the future.

4.1.8.1 Attitude toward Science Class

Table 21 indicates that 35 percent of fifth-grade students reported they always liked science classes this year. Seventeen percent reported never or rarely liking science classes. The attitude toward science class closely corresponds to their science grades given and reported science learning (see Tables 11 and 19).

Table 21

EXTENT TO WHICH FIFTH-GRADE STUDENTS LIKED SCIENCE CLASSES THIS YEAR (1987)

LIKING	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.ALWAYS	21	41.2	12	23.5	27	55.1	11	22.0	71	35.3
2.SOMETIMES	26	51.0	34	66.7	17	34.7	16	32.0	93	46.3
3.RARELY	3	5.9	3	5.9	3	6.1	20	40.0	29	14.4
4.NEVER	1	2.0	1	2.0	0	0.0	3	6.0	5	2.5
5.MISSING DATA	0	0.0	1	2.0	2	4.1	0	0.0	3	1.5

Table 22 presents data on fifth-grade students' attitude toward previous science classes. More students reported they liked science classes and fewer students reported rarely or never liking science classes in previous years than this year (1987). About 15 percent more fifth-grade students appeared to dislike science classes this year than in previous years.

Table 22

EXTENT TO WHICH FIFTH-GRADE STUDENTS LIKED SCIENCE CLASSES IN PREVIOUS YEARS

LIKING	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.ALWAYS	20	39.2	17	33.3	27	55.1	20	40.0	84	41.8
2.SOMETIMES	29	56.9	31	60.8	22	44.9	28	56.0	110	54.7
3.RARELY	2	3.9	2	3.9	0	0.0	2	4.0	6	3.0
4.NEVER	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.MISSING DATA	0	0.0	1	2.0	0	0.0	0	0.0	1	0.5

Table 23 shows eighth-grade students' liking of science classes this year (1987). About 29 percent reported always liking science classes; about 13 percent reported never or rarely liking science classes.

Table 23

EXTENT TO WHICH EIGHTH-GRADE STUDENTS LIKED SCIENCE CLASSES THIS YEAR (1987)

LIKING	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.ALWAYS	30	52.8	20	35.7	11	17.7	9	14.5	70	29.3
2.SOMETIMES	23	39.0	33	58.9	42	67.7	41	66.1	139	58.2
3.RARELY	5	8.5	3	5.4	9	14.5	9	14.5	26	10.9
4.NEVER	1	1.7	0	0.0	0	0.0	3	4.8	4	1.7

Table 24 shows eighth-grade students' liking of science classes in previous years. More students reported always

liking science classes in 1987 than in past years. Fewer students reported rarely liking science classes in 1987 than in past years.

Table 24

EXTENT TO WHICH EIGHTH-GRADE STUDENTS LIKED SCIENCE CLASSES IN PREVIOUS YEARS

LIKING	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.ALWAYS	7	11.9	11	19.6	8	12.9	13	21.0	39	16.3
2.SOMETIMES	38	64.4	34	60.7	36	58.1	40	64.5	148	61.9
3.RARELY	9	15.3	10	17.9	14	22.6	6	9.7	39	16.3
4.NEVER	5	8.5	1	1.8	4	6.5	3	4.8	13	5.4

4.1.8.2 Science as Favorite Subject

Table 25 shows the distribution of fifth-grade students reporting science as their favorite or least favorite subject. About 84 percent indicated science was their favorite or second favorite subject. About the same percent of fifth-grade students indicated that they liked science classes this year (see Table 21). Only four percent reported science to be their least favorite subject.

Table 26 shows the distribution of eighth-grade students reporting science as their favorite or least favorite subject. About 50 percent indicated science was their favorite or second favorite subject. More eighth-grade students (9 percent) than fifth-grade students (4 percent) reported

Table 25

PERCENTAGE OF FIFTH-GRADE STUDENTS REPORTING SCIENCE AS A FAVORITE OR LEAST FAVORITE SUBJECT THIS YEAR (1987)**

RANKING*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.	9	17.6	7	13.7	15	30.6	11	22.0	42	20.9
2.	37	72.5	41	80.4	25	51.0	23	46.0	126	62.7
3.	1	2.0	1	2.0	1	2.0	5	10.0	8	4.0

*1.favorite subject
2.second favorite subject
3.least favorite subject

** Totals do not add to 100 percent because some students did not respond to the item.

science as their least favorite subject. About 30 percent of eighth-grade students did not select a response, indicating less interest in science as a favorite subject by eighth-grade students. Females (all students enrolled in School 2 of the eighth grade were females) showed a greater drop of interest in science from fifth grade to eighth grade.

Table 26

PERCENTAGE OF EIGHTH-GRADE STUDENTS REPORTING SCIENCE AS A FAVORITE OR LEAST FAVORITE SUBJECT THIS YEAR (1987)**

RANKING	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.	9	15.3	12	21.4	3	4.8	3	4.8	27	11.3
2.	34	57.6	32	57.1	11	17.7	18	29.0	95	39.7
3.	3	5.1	0	0.0	9	14.5	9	14.5	21	8.8

*1. favorite subject
2. second favorite subject
3. least favorite subject

** Totals do not add to 100 percent because some students did not respond to the item.

4.1.8.3 Interest in Taking Science Courses in the Future

Table 27 reports the responses of fifth-grade students regarding their plans to take additional science courses in the future. Seventy percent of males and 40 percent of females reported they planned to take science in the future.

Only 57 percent of fifth-grade students wanted to take additional science courses in the future, while about 82 percent reported liking science this year (see Table 21).

Table 28 reports similar data for eighth-grade students regarding taking science courses in the future. Fifty-seven percent of males and 32 percent of females responded positively. Interest in taking science courses in the

Table 27

PERCENTAGE OF FIFTH-GRADE STUDENTS BY SEX WHO PLAN TO TAKE SCIENCE COURSES IN THE FUTURE

TAKING SCIENCE	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
MALE	22	73.3	20	71.4	19	76.0	18	62.1	79	70.5
FEMALE	9	42.9	6	26.1	11	45.8	9	42.9	35	39.3
TOTAL	31	60.8	26	51.0	30	61.2	27	54.0	114	56.7

future dropped from fifth grade to eighth grade for both males and females, though a majority of eighth-grade students liked science classes this year (see Table 23).

Table 28

PERCENTAGE OF EIGHTH-GRADE STUDENTS BY SEX WHO PLAN TO TAKE SCIENCE COURSES IN THE FUTURE

TAKING SCIENCE	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
MALE	39	66.1	27	48.2	0	0.0	0	0.0	66	57.4
FEMALE	0	0.0	0	0.0	20	32.3	19	30.6	39	31.5
TOTAL	39	66.1	27	48.2	20	32.2	19	30.6	105	43.9

4.1.9 INVOLVEMENT IN SCIENCE-RELATED ACTIVITIES

Table 29 presents the percentages of the fifth-grade students who were involved in science or science-related activities. Most frequent science-related activities were: (1) read science articles in magazines or books (78 per-

cent); (2) watch science T.V. programs (65 percent); (3) read science articles in newspaper (53 percent); and (4) visit farmers or involve in gardening (38 percent). These results indicate substantial possible out-of-school impact on the students' science learning.

Table 29

PERCENTAGE OF FIFTH-GRADE STUDENTS REPORTING PREVIOUS INVOLVEMENT IN SCIENCE AND SCIENCE-RELATED ACTIVITIES

SCIENCE ACTIVITY*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
1.	5	9.8	2	3.9	2	4.1	1	2.0	10	5.0
2.	11	21.6	12	23.5	9	18.4	4	8.0	36	17.9
3.	43	84.3	39	76.5	44	89.8	30	60.0	156	77.6
4.	28	54.9	29	56.9	30	61.2	19	38.0	106	52.7
5.	38	74.5	40	78.4	34	69.4	18	36.0	130	64.7
6.	18	35.3	21	41.2	22	44.9	15	30.0	76	37.8

*1. participated in science fair projects.
2. have been a member of a science club.
3. read science magazines or books.
4. read science articles in newspapers.
5. watched science television programs.
6. gardening and/or visited farms.

Table 30 presents eighth-grade students' involvement in science-related activities. Most frequent science-related activities were: (1) watch science T.V. programs (70 percent); and (2) read science articles in magazines or books (59 percent). Out-of-home activities such as visiting farmers or gardening appear to be less for eighth-grade

students than for fifth-grade students. In addition, about a 23 percent drop for reading science articles in newspapers was reported from fifth grade to eighth grade.

Table 30

PERCENTAGE OF EIGHTH-GRADE STUDENTS REPORTING PREVIOUS INVOLVEMENT IN SCIENCE AND SCIENCE-RELATED ACTIVITIES

SCIENCE ACTIVITY*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
1.	6	10.2	3	5.4	2	3.2	3	4.8	14	5.9
2.	10	16.9	12	21.4	4	6.5	7	11.3	33	13.8
3.	44	74.6	39	69.6	30	48.4	29	46.8	142	59.4
4.	24	40.7	23	41.1	13	21.0	11	17.7	71	29.7
5.	42	71.2	43	76.8	39	62.9	42	67.7	166	69.5
6.	10	16.9	11	19.6	4	6.5	9	14.5	34	14.2

*1.participated in science fair projects.
2.have been a member of a science club.
3.read science magazines or books.
4.read science articles in newspapers.
5.watched science television programs.
6.gardening and/or visited farms.

4.1.10 SCIENCE LEARNING STYLE

Table 31 reports fifth-grade students' responses to favorite learning styles. The three favorite learning styles were: doing laboratory activities (57 percent); listening to lectures (19 percent); and working in out-door activities (10 percent).

Table 32 reports eighth-grade students' responses to favorite learning styles. They responded in the same order

Table 31

FAVORITE LEARNING STYLES OF FIFTH-GRADE STUDENTS

LEARNING STYLE* (F,S,T CHOICE)**	SCHOOL 1 CLASS 1 n-51		SCHOOL 1 CLASS 2 n-51		SCHOOL 2 CLASS 3 n-49		SCHOOL 2 CLASS 4 n-50		TOTAL n-201	
	n	%	n	%	n	%	n	%	n	%
1.F	27	52.9	25	49.0	33	67.3	30	60.0	115	57.2
S	10	19.6	15	29.4	9	18.4	15	30.0	49	24.4
T	9	17.6	5	9.8	4	8.2	5	10.0	23	11.4
2.F	9	17.6	14	27.5	6	12.2	9	18.0	38	18.9
S	17	33.3	10	19.6	16	32.7	8	16.0	51	25.4
T	9	17.6	12	23.5	13	26.5	16	32.0	50	24.9
3.F	7	13.7	3	5.9	5	10.2	4	8.0	19	9.5
S	9	17.6	7	13.7	8	16.3	8	16.0	32	15.9
T	13	25.5	7	13.7	11	22.4	11	22.0	42	20.9
4.F	3	5.9	4	7.8	3	6.1	5	10.0	15	7.5
S	8	15.7	11	21.6	10	20.4	14	28.0	43	21.4
T	9	17.6	11	21.6	9	18.4	14	28.0	43	21.4
5.F	4	7.8	2	3.9	2	4.1	2	4.0	10	5.0
S	6	11.8	5	9.8	6	12.2	6	12.0	23	11.4
T	10	19.6	13	25.5	12	24.5	5	10.0	40	19.9

*1.doing laboratory activities
2.listening to lectures
3.working in outdoor activities
4.working in a group
5.reading by myself

**Students selected three activities in favorite order: F first, S second, and T third choice.

as fifth-grade students, with more interest shown in lecture presentations and reading.

Table 32

FAVORITE LEARNING STYLES OF EIGHTH-GRADE STUDENTS

LEARNING STYLE* (F,S,T CHOICE)**	SCHOOL 1 CLASS 1 n-59		SCHOOL 1 CLASS 2 n-56		SCHOOL 2 CLASS 3 n-62		SCHOOL 2 CLASS 4 n-62		TOTAL n-239	
	n	%	n	%	n	%	n	%	n	%
1.F	21	39.3	37	66.1	23	37.1	22	35.5	104	44.3
S	12	21.4	8	14.3	16	25.8	17	27.4	53	22.6
T	8	14.3	6	10.7	13	21.0	8	12.9	35	14.9
2.F	14	25.0	8	14.3	22	35.5	22	35.5	66	28.1
S	17	30.4	17	30.4	25	40.3	15	24.2	74	31.5
T	13	23.2	15	26.8	9	14.5	10	16.1	47	20.0
3.F	4	7.3	13	5.4	8	12.9	10	16.1	25	10.7
S	8	14.5	9	16.1	11	17.7	18	29.0	46	19.7
T	9	16.4	6	10.7	17	27.4	16	25.8	48	20.5
4.F	9	16.4	2	3.6	5	8.1	5	8.1	21	9.0
S	8	13.6	10	17.9	3	4.8	9	14.5	30	12.8
T	10	16.9	10	17.9	8	12.9	12	19.4	40	17.1
5.F	7	11.9	5	8.9	4	6.5	3	4.8	19	8.1
S	10	16.9	11	19.6	7	11.3	3	4.8	31	13.2
T	14	23.7	18	32.1	15	24.2	17	27.4	64	27.2

*1.doing laboratory activities
2.listening to lectures
3.working in outdoor activities
4.working in a group
5.reading by myself

**Students selected three activities in favorite order: F first choice, S second choice, and T third choice

4.2 STUDENTS' LOGICAL REASONING ABILITY

This section presents the Piagetian Logical Reasoning Test (PLRT) results. The group mean for each item, distribution of the total score values, and percentage of stu-

dents at each reasoning level are presented in this section.

4.2.1 PLRT ITEM ACHIEVEMENT

Table 33 indicates means and standard deviations of the PLRT items for fifth-grade students. The students had high performances (group means greater than .750, with 1.00 the maximum score) on the four concrete items; #1, #2, #3 and #7. The items were constructed to measure reasoning such as serial ordering, selecting variables, one-to-one correspondence, and inverse relation, respectively.

The fifth-grade students had middle level performances (group means between .500 and .750) on the four transitional level items, #6, #8-1, #8-2 and #9. The four items were constructed to measure reasoning such as combinatorial reasoning, class-subclass relationships (Lawson, 1979), and control of variables at the transitional level.

The fifth-grade students had low achievements (group means less than .500) on the four formal level items, #4, #5, #10 and #11. The items were designed to measure reasoning such as correlational reasoning, control of variables, and combinatorial reasoning. Adi, et al. (1978) showed that correlational reasoning consists of probabilistic and proportional reasoning, and established a criterion for scoring correlational items which only the students who could show the ratio concept verbally and by equation got

the item correct. The same criterion was applied to this study. Though many fifth-grade students perceived correctly what was asked for in the correlation item #4, they seldom transformed their recognition into complete verbal expression.

Table 33

THE PLRT ITEM ACHIEVEMENT MEANS AND STANDARD DEVIATIONS OF FIFTH-GRADE STUDENTS

ITEM	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1		CLASS 2		CLASS 3		CLASS 4			
	m	s.d.	m	s.d.	m	s.d.	m	s.d.	m	s.d.
#1	.941	.238	.882	.325	1.000	.000	.920	.274	.935	.247
#2	.922	.272	.804	.401	.980	.143	.960	.198	.915	.279
#3	.961	.196	.941	.238	1.000	.000	1.000	.000	.975	.156
#4	.039	.196	.039	.196	.163	.373	.100	.303	.085	.279
#5	.235	.428	.196	.401	.469	.504	.440	.501	.333	.473
#6	.471	.504	.490	.505	.898	.306	.700	.463	.637	.482
#7	.961	.196	.941	.238	1.000	.000	1.000	.000	.975	.156
#8-1	.647	.483	.569	.500	.878	.331	.700	.463	.697	.461
#8-2	.667	.476	.529	.504	.898	.306	.800	.404	.721	.449
#9	.471	.504	.451	.503	.694	.466	.500	.505	.527	.500
#10	.078	.272	.059	.238	.163	.373	.180	.388	.119	.325
#11	.078	.272	.020	.140	.265	.446	.380	.490	.184	.389
MEAN	6.471		5.922		8.408		7.680		7.104	
S.D.	2.023		1.968		1.526		2.142		2.153	

Table 34 presents means and standard deviations for eighth-grade students on the PLRT. The students showed a high level of performance (group means greater than .750) on the four concrete level items and on three transitional items, #6, #8-1 and #8-2. The eighth-grade students had middle level performance (group means between .500 and

.750) on one transitional level item #9 and one formal level item #5. The eighth-grade students had low level performance on three formal level items (group means less than .500), #4, #10 and #11.

Table 34

THE PLRT ITEM ACHIEVEMENT MEANS AND STANDARD DEVIATIONS OF EIGHTH-GRADE STUDENTS

ITEM	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1		CLASS 2		CLASS 3		CLASS 4			
	m	s.d.	m	s.d.	m	s.d.	m	s.d.	m	s.d.
#1	.949	.222	.946	.227	.935	.248	.952	.216	.946	.227
#2	.966	.183	.929	.260	.935	.248	.871	.338	.925	.264
#3	.949	.222	.946	.227	.919	.275	.887	.319	.925	.264
#4	.186	.393	.143	.353	.032	.178	.081	.275	.109	.312
#5	.644	.483	.446	.502	.629	.487	.581	.497	.577	.495
#6	.898	.305	.946	.227	.823	.385	.823	.385	.870	.337
#7	.983	.130	.964	.187	1.000	.000	1.000	.000	.987	.112
#8-1	.881	.326	.875	.334	.887	.319	.790	.410	.858	.350
#8-2	.932	.254	.875	.334	.887	.319	.871	.338	.891	.312
#9	.695	.464	.714	.456	.677	.471	.694	.465	.695	.462
#10	.339	.477	.250	.437	.242	.432	.258	.441	.272	.446
#11	.644	.483	.564	.501	.323	.471	.339	.477	.462	.500
MEAN	9.068		8.600		8.290		8.048		8.492	
S.D.	1.946		1.822		1.823		2.243		1.995	

The comparison of both groups shows the same pattern in their achievement on the 12 items of the Piagetian Logical Reasoning Test, showing three levels of item performance--high, middle, and low (Tables 35 and 36). For the concrete level items, both of the groups had high performance. For the transitional and formal level items, eighth-grade students scored higher than did fifth-grade students.

Table 35

DISTRIBUTION OF THE PLRT ITEMS FOR FIFTH-GRADE STUDENTS IN THE ORDER OF ACHIEVEMENT

	group means of items										
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CV*		#10			#5		#9			#2	
CB			#11		#5**			#6			#3
CR		#4						#8-1 #8-2		#1	#7

* CV indicates control of variables; CB combinatorial reasoning; and CR correlational reasoning.

** Item #5 of the PLRT instrument was designed to measure both control of variables and combinatorial reasoning.

Table 36

DISTRIBUTION OF THE PLRT ITEMS FOR EIGHTH-GRADE STUDENTS IN THE ORDER OF ACHIEVEMENT

	group means of items										
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CV*				#10			#5	#9		#2	
CB						#11	#5**			#6 #3	
CR		#4								#8-1 #1 #8-2	#7

* CV indicates control of variables; CB combinatorial reasoning; and CR correlational reasoning.

** Item #5 of the PLRT instrument was designed to measure both control of variables and combinatorial reasoning.

4.2.2 STUDENTS' LOGICAL REASONING LEVEL

Table 37 indicates the distribution of fifth-grade students' PLRT total scores. About 85 percent of Grade 5 students' total scores ranged between 5 and 10. About seven percent of the students reached the formal level on the total scores (11-12).

Table 37

DISTRIBUTION OF FIFTH-GRADE STUDENTS BY THE PLRT TOTAL SCORES

TOTAL SCORE	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	1	2.0	2	3.9	0	0.0	0	0.0	3	1.5
3	2	3.9	3	5.9	0	0.0	0	0.0	5	2.5
4	5	9.8	8	15.7	0	0.0	5	10.0	18	9.0
5	9	17.6	10	19.6	0	0.0	4	8.0	23	11.4
6	10	19.6	8	15.7	5	10.2	7	14.0	30	14.9
7	9	17.6	8	15.7	9	18.4	5	10.0	31	15.4
8	6	11.8	6	11.8	14	28.6	10	20.0	36	17.9
9	6	11.8	5	9.8	9	18.4	10	20.0	30	14.9
10	1	2.0	1	2.0	8	16.3	2	4.0	12	6.0
11	2	3.9	0	0.0	2	4.1	7	14.0	11	5.5
12	0	0.0	0	0.0	2	4.1	0	0.0	2	1.0

Table 38 shows the percentage of fifth-grade students at each reasoning level determined on the basis of the PLRT total score--that is, total scores 0-3 for pre-concrete reasoning level; 4-7 for concrete reasoning level; 8-10 for transitional reasoning level; and 11-12 for formal reasoning level.

The data show that about 51 percent of the fifth-grade students were at the concrete; about 39 percent at the transitional; and about seven percent at the formal reasoning level.

Table 38

PERCENTAGE OF FIFTH-GRADE STUDENTS AT EACH REASONING LEVEL

REASONING LEVEL*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-51		CLASS 2 n-51		CLASS 3 n-49		CLASS 4 n-50		n-201	
	n	%	n	%	n	%	n	%	n	%
PRECONCRETE	3	5.9	5	9.8	0	0.0	0	0.0	8	4.0
CONCRETE	33	64.7	34	66.7	14	28.6	21	42.0	102	50.7
TRANSITIONAL	13	25.5	12	23.5	31	63.3	22	44.0	78	38.8
FORMAL	2	3.9	0	0.0	4	8.2	7	14.0	13	6.5

* Three reasoning levels were determined based on the principle that in order to say a student has reached a certain reasoning level, he responded correctly on at least two-thirds of the items measuring the reasoning level and all the items below that level. As the result, pre-concrete reasoning level corresponded to total scores of 0 to 3; concrete level to 4 to 7; transitional level to 8 to 10; and formal level to 11 to 12.

Table 39 indicates the distribution of eighth-grade students' PLRT total scores. About 62 percent of eighth-grade students ranged between 8 and 10; these scores represent the transitional reasoning level. Thirteen percent reached the formal level (11-12).

Table 40 presents the percentages of eighth-grade students at each reasoning level determined on the basis of their total score on the PLRT. The majority of the stu-

Table 39

DISTRIBUTION OF EIGHTH-GRADE STUDENTS BY THE PLRT TOTAL SCORES

TOTAL SCORE	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
0	0	0.0	0	0.0	0	0.0	1	1.6	1	0.4
1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	0	0.0	0	0.0	1	1.6	1	1.6	2	0.8
4	2	3.4	2	3.6	3	4.8	1	1.6	8	3.3
5	1	1.7	1	1.8	1	1.6	4	6.5	7	2.9
6	6	10.2	3	5.4	4	6.5	8	12.9	21	8.8
7	0	0.0	7	12.5	7	11.3	7	11.3	21	8.8
8	9	15.3	13	23.2	14	22.6	12	19.4	48	20.1
9	14	23.7	11	19.6	15	24.2	9	14.5	49	20.5
10	14	23.7	11	19.6	13	21.0	12	19.4	50	20.9
11	8	13.6	4	7.1	4	6.5	6	9.7	22	9.2
12	5	8.5	3	5.4	0	0.0	1	1.6	9	3.8
MISSING DATA	0	0.0	1	1.8	0	0.0	0	0.0	1	0.4

dents were at the transitional level; 25 percent at the concrete level; and 13 percent at the formal level. Maynard (1979) presented a cognitive growth table in which 14 percent of 13-year-old students reached the formal reasoning level. The results of this study coincide with Maynard's analysis.

The comparison of two groups in terms of cognitive development reveals that 23 and seven percent more eighth-grade students were at the transitional and formal reasoning levels, respectively.

Table 40

PERCENTAGE OF EIGHTH-GRADE STUDENTS AT EACH REASONING LEVEL

REASONING LEVEL*	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1 n-59		CLASS 2 n-56		CLASS 3 n-62		CLASS 4 n-62		n-239	
	n	%	n	%	n	%	n	%	n	%
PRECONCRETE	0	0.0	0	0.0	1	1.6	2	3.2	3	1.2
CONCRETE	9	15.3	13	23.6	15	24.2	20	33.3	57	23.8
TRANSITIONAL	37	62.7	35	63.6	42	67.7	33	53.2	147	61.8
FORMAL	13	22.0	7	12.7	4	6.5	7	11.3	31	13.0

* Three reasoning levels were determined based upon the principle that in order to say a student has reached a certain reasoning level, he responded correctly on at least two-thirds of the items measuring the reasoning level and all the items below that level. As the result, the pre-concrete reasoning level corresponded to total scores 0 to 3; concrete 4 to 7; transitional 8 to 10; and formal 11 to 12.

4.3 STUDENTS' UNDERSTANDING OF CONCEPT OF PHOTOSYNTHESIS

This section includes students' achievement on the Photosynthesis Concepts Test, analysis of items by achievement level, and the correlation results between textbook emphasis and item achievement by item. The Photosynthesis Concepts Test was designed to evaluate only knowledge related to photosynthesis.

4.3.1 STUDENTS' ACHIEVEMENT OF THE PHOTOSYNTHESIS CONCEPTS TEST

Table 41 presents the Photosynthesis Concepts Test item achievement of fifth-grade students. Their overall performance was very low on the test. They achieved a mean above 0.5 on 10 items and a mean below 0.5 on 24 items. See Appendix B for a copy of the test.

Table 42 presents the PCT item achievement of eighth-grade students. Detail discussion is presented in the following subsection. See Appendix B for a copy of the test.

Table 41

THE PCT ITEM ACHIEVEMENT MEANS AND STANDARD DEVIATIONS OF FIFTH-GRADE STUDENTS

ITEM	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1		CLASS 2		CLASS 3		CLASS 4			
	m	s.d.	m	s.d.	m	s.d.	m	s.d.	m	s.d.
#1	.745	.440	.824	.385	.633	.487	.760	.431	.741	.439
#2	.882	.325	.941	.238	.918	.277	.920	.274	.915	.279
#3	.824	.385	.529	.504	.735	.446	.700	.463	.697	.461
#4	.431	.500	.275	.451	.510	.505	.560	.501	.443	.498
#5	.490	.505	.569	.500	.551	.503	.480	.505	.522	.501
#6	.020	.140	.000	.000	.000	.000	.000	.000	.005	.071
#7	.157	.367	.098	.300	.122	.331	.080	.274	.114	.319
#8	.275	.451	.059	.238	.234	.428	.180	.388	.186	.390
#9	.294	.460	.314	.469	.469	.504	.420	.499	.373	.485
#10	.216	.415	.275	.451	.347	.481	.220	.418	.264	.442
#11	.353	.483	.373	.488	.347	.481	.260	.443	.333	.473
#12	.510	.505	.373	.488	.551	.503	.440	.501	.468	.500
#13a	1.706	.610	1.608	.603	1.857	.408	1.800	.452	1.756	.525
#13b	1.176	.740	.235	.428	.469	.793	.620	.830	.542	.800
#14a	1.059	.580	.520	.707	.755	.778	.660	.717	.705	.775
#14b	.922	.560	.078	.272	.204	.499	.140	.351	.229	.545
#15	.157	.367	.118	.325	.102	.306	.360	.485	.184	.389
#16	.431	.500	.353	.483	.510	.505	.320	.471	.403	.492
#17	.451	.503	.255	.440	.388	.492	.420	.499	.378	.486
#18a	.451	.503	.373	.488	.286	.456	.300	.463	.353	.479
#18b	.039	.136	.020	.140	.041	.200	.080	.274	.045	.207
#19a	.353	.483	.392	.493	.592	.497	.460	.503	.448	.499
#19b	.137	.348	.137	.348	.245	.434	.280	.454	.199	.400
#20	.275	.451	.140	.351	.245	.434	.300	.463	.240	.428
#21a	.667	.476	.706	.460	.755	.434	.680	.471	.701	.459
#21b	.196	.401	.333	.476	.163	.373	.320	.471	.254	.436
#21c	.863	.348	.765	.428	.878	.331	.800	.404	.826	.380
#21d	.824	.385	.745	.440	.776	.422	.820	.388	.791	.408
#21e	.294	.460	.353	.483	.449	.503	.400	.495	.373	.485
#21f	.333	.476	.521	.505	.592	.497	.660	.479	.525	.501
#21g	.255	.440	.471	.504	.469	.504	.480	.505	.418	.494
#21h	.235	.428	.294	.460	.106	.312	.280	.454	.231	.423
#21i	.510	.505	.540	.503	.776	.422	.600	.495	.605	.490
#21j	.412	.497	.431	.070	.265	.446	.500	.505	.403	.492
MEAN*	16.941		14.022		16.378		16.300		15.670	
S.D.	3.870		3.696		4.313		4.087		4.102	

* indicates class means of total items

Table 42

THE PCT ITEM ACHIEVEMENT MEANS AND STANDARD DEVIATIONS OF EIGHTH-GRADE STUDENTS

ITEM	SCHOOL 1				SCHOOL 2				TOTAL	
	CLASS 1		CLASS 2		CLASS 3		CLASS 4			
	m	s.d.	m	s.d.	m	s.d.	m	s.d.	m	s.d.
#1	.593	.495	.589	.496	.677	.471	.516	.504	.594	.492
#2	.847	.363	.893	.312	.806	.398	.839	.371	.845	.362
#3	.763	.429	.893	.312	.855	.355	.710	.458	.803	.398
#4	.492	.504	.625	.439	.468	.503	.435	.500	.502	.501
#5	.559	.501	.536	.503	.677	.471	.452	.502	.556	.498
#6	.102	.305	.071	.260	.113	.041	.065	.248	.088	.284
#7	.051	.222	.018	.134	.005	.248	.000	.000	.033	.180
#8	.797	.406	.714	.456	.500	.504	.548	.064	.636	.482
#9	.661	.477	.582	.498	.516	.504	.371	.487	.529	.500
#10	.492	.504	.673	.474	.613	.491	.419	.497	.546	.499
#11	.729	.448	.836	.373	.656	.479	.548	.502	.688	.464
#12	.780	.418	.636	.485	.525	.504	.694	.465	.658	.475
#13	1.814	.473	1.768	.539	1.790	.547	1.839	.451	1.803	.501
#13b	1.441	.836	1.393	.867	1.129	.949	.871	.966	1.201	.931
#14a	1.085	.836	.964	.830	.710	.797	.613	.817	.837	.837
#14b	.898	.845	.804	.862	.387	.662	.387	.732	.611	.807
#15	.610	.492	.691	.466	.645	.482	.806	.398	.689	.464
#16	.780	.418	.714	.456	.677	.471	.548	.502	.678	.468
#17	.328	.473	.250	.437	.403	.495	.290	.458	.319	.467
#18a	.448	.502	.536	.503	.323	.471	.323	.471	.403	.492
#18b	.086	.283	.089	.288	.032	.178	.016	.127	.055	.228
#19a	.814	.393	.875	.334	.918	.277	.903	.298	.878	.328
#19b	.627	.488	.589	.496	.607	.493	.435	.500	.563	.497
#20	.373	.488	.472	.504	.393	.493	.484	.504	.430	.496
#21a	.931	.256	.778	.420	.935	.248	.919	.275	.894	.308
#21b	.196	.401	.113	.320	.328	.473	.197	.401	.211	.409
#21c	.864	.345	.907	.293	.935	.248	.574	.499	.818	.387
#21d	.931	.256	.855	.356	.968	.178	.903	.298	.916	.279
#21e	.732	.447	.566	.500	.508	.504	.492	.504	.575	.495
#21f	.778	.420	.731	.448	.610	.492	.712	.457	.709	.455
#21g	.607	.493	.509	.505	.517	.504	.661	.477	.577	.495
#21h	.200	.404	.185	.392	.311	.467	.183	.390	.223	.417
#21i	.800	.404	.849	.361	.828	.381	.864	.345	.839	.368
#21j	.582	.498	.500	.505	.172	.381	.150	.360	.345	.476
MEAN*	22.943		22.360		20.731		18.475		20.986	
S.D.	5.746		5.348		4.883		4.485		5.360	

* indicates class means of total items

4.3.2 ANALYSIS OF THE PCT ITEMS BY ACHIEVEMENT LEVEL

Tables 43 and 44 indicate the group means on the PCT items for fifth- and eighth-grade students by concept clusters, respectively (see Table 1 for concept clusters). The item achievement for the two groups is discussed, dividing the items into four achievement levels based upon the group mean on the items--a mean below 0.25, between 0.25 and 0.50, between 0.51 and 0.75, and above 0.75.

Table 43

GROUP MEANS OF THE PCT ITEMS BY CONCEPT CLUSTERS FOR FIFTH-GRADE STUDENTS

	group means of items										
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CLUSTER ONE								#1		#2	
CLUSTER TWO		#7				#4		#3			
CLUSTER THREE	#6					#5					
CLUSTER FOUR	#18b	#14b		#13b #21b	#14a #17 #18a #21g #21j #21h #21e		#21f #21i	#21a	#21d	#13a #21c	
CLUSTER FIVE			#15 #19b	#10	#11 #9 #16	#12 #19a					
CLUSTER SIX		#8		#20							

4.3.2.1 Items with Group Means below 0.25

For fifth-grade students, mean scores on items #7 of Cluster Two, #6 of Cluster Three, #14b, #18b, #21b, and #21h of Cluster Four, #15 and #19b of Cluster Five, and #8 and #20 of Cluster Six were below 0.25. For eighth-grade students, mean scores on items #7 of Cluster Two, #6 of Cluster Three, #18b, #21b and #21h of Cluster Four were achieved below 0.25.

Both groups scored below .25 on items #6, #7, #18b, #21b and #21h; eighth-grade students scored higher than fifth-grade students on items #8, #14b, #15, #19b, #20 with gains of 0.45, 0.38, 0.51, 0.36, and 0.19, respectively.

4.3.2.2 Items with Group Means between 0.25 and 0.50

For fifth-grade students, mean scores on items #4 of Cluster Two, #13b, #14a, #17, #18a, #21e, #21g, #21j of Cluster Four, and #9, #10, #11, #12, #16, #19a of Cluster Five were between 0.25 and 0.5.

For eighth-grade students, mean scores on items #14a, #14b, #17, #18a and #21j of Cluster Four and #20 of Cluster Six were between 0.25 and 0.50.

Both groups had group mean achievements between 0.25 and 0.50 on items #14a, #17, #18a and #21j; eighth-grade students scored higher than fifth-grade students on items #14b and #20, with gains of 0.38 and 0.19, respectively.

Table 44

GROUP MEANS OF THE PCT ITEMS BY CONCEPT CLUSTERS FOR EIGHTH-GRADE STUDENTS

	group means of items										
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CLUSTER ONE							#1			#2	
CLUSTER TWO	#7					#4			#3		
CLUSTER THREE	#6					#5					
CLUSTER FOUR		#18b	#21h #21b	#14b #17 #21j	#14a #18a		#13b #21e #21g	#21f		#13a #21a #21d #21c #21i	
CLUSTER FIVE				#11		#9 #10 #19b	#11 #12 #15 #16				#19a
CLUSTER SIX					#20		#8				

4.3.2.3 Items with Group Means between 0.51 and 0.75

For fifth-grade students, mean scores on items #1 of Cluster One, #3 of Cluster Two, #5 of Cluster Three, and #21a, #21f and #21i of Cluster Four were 0.51 and 0.75.

For eighth-grade students, mean scores on items #1 of Cluster One, #4 of Cluster Two, #5 of Cluster Three, #13b, #21e, #21f and #21g of Cluster Four, whole items of Cluster Five except #19a, and #8 of Cluster Six were between 0.51 and 0.75.

Both groups had group mean achievements between 0.51 and 0.75 on items #1, #5, and #21f.

Eighth-grade students scored substantially higher than fifth-grade students on most items with a group mean between 0.51 and 0.75--#8 (0.45), #9 (0.16), #10 (0.29), #11 (0.35), #12 (0.19), #13b (0.66), #15 (0.51), #16 (0.28), #19b (0.36), #21e (0.21), #21f (0.18), and #21g (0.16). The decimals in parentheses indicate the gains in group means on the items by eighth-grade students.

4.3.2.4 Items with Group Means above 0.75

For fifth-grade students, mean scores on items #2 of Cluster One, #13a, #21c and #21d of Cluster Four were above 0.75. For eighth-grade students, mean scores on items #2 of Cluster One, #3 of Cluster Two, #13a, #21a, #21c, #21d and #21i of Cluster Four, and #19a of Cluster Five were above 0.75.

Both groups had group mean achievements above 0.75 on items, #2, #13a, #21c, and #21d.

Eighth-grade students scored higher than fifth-grade on the following items: #3 (0.10), #19a (0.43), #21a (0.17) and #21i (0.23). The decimals in parentheses indicate gains in group means on the items by eighth-grade students.

4.4 TEXTBOOK EMPHASIS AND THE PCT ITEM ACHIEVEMENT

This section includes information about overall relationships between textbook emphasis and PCT achievement by item, the relationships by items of three reasoning levels, and the relationships by items of three Bloom's taxonomy levels--knowledge, comprehension, and application.

4.4.1 CORRELATION BETWEEN TEXTBOOK EMPHASIS AND ITEM ACHIEVEMENT OF THE PCT FOR EIGHTH-GRADE STUDENTS

Table 45 shows the relationship between textbook emphasis and the PCT item achievement for eighth-grade students. A significant correlation ($r=0.67$, $p<0.001$) was obtained between textbook emphasis and item achievement by item. The general tendency was that the students had high achievement on items on which science textbooks put high emphasis; low emphasis when there was low emphasis.

As far as the differences or discrepancies between textbook emphasis and item achievement are concerned, items #14a and #14b showed the greatest differencies. The result can be interpreted by comparing student achievement with the percentage of eighth-grade students at each reasoning level (see Tables 36 and 40 for reasoning levels of eighth-grade students).

Items #14a and #14b both required such reasoning skills as control of variables and correlational reasoning at the transitional level for students to respond correctly (see

Table 1 for the required reasoning skills and level for each of the PCT items). Table 40 indicates that about 75 percent of Grade 8 students were at or above the transitional reasoning level. It suggests that, at most, 75 percent of the students could give correct answers to the items. The percentage indicates the break-point between middle and high level of achievement on the PCT instrument.

On the other hand, the group mean on item #14a was 0.42. In addition, even though the textbooks emphasized the content related to the item, mastery of the content by the students could not be assumed. These variables could explain the achievement on items #14a and #14b by eighth-grade students in spite of high curriculum emphasis.

In relation to item #7, students were confused between food as an energy source and nutrients such as vitamins and minerals. The analysis of Korean science textbooks indicated that they did not separate the concept out. Neither Korean students in this study nor American students in the pilot study separated the concept out.

The explanations above about relationships between textbook emphasis, logical reasoning level and item achievement lead to some implications for effective instructional strategies and curriculum development, which are discussed in Chapter Five.

Table 45

CORRELATION BETWEEN TEXTBOOK EMPHASIS AND ITEM ACHIEVEMENT OF THE PCT FOR EIGHTH-GRADE STUDENTS

ITEM	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13a	#13b
EMPHASIS*	H	H	H	M	H	L	M	M	M	M	M	M	H	H
ACHIEVE.**	M	H	H	M	M	L	L	M	M	M	M	M	H	M

ITEM	#14a	#14b	#15	#16	#17	#18a	#18b	#19a	#19b	#20	#21a
EMPHASIS	H	H	M	M	L	NONE	NONE	M	M	L	H
ACHIEVE.	L	L	M	M	L	L	L	M	M	L	H

ITEM	#21b	#21c	#21d	#21e	#21f	#21g	#21h	#21i	#21j
EMPHASIS	L	H	H	M	M	M	L	M	L
ACHIEVE.	L	H	H	M	M	M	L	H	L

Correlation coefficient r=0.67, $p.<.001$, n=34

$\chi^2 = 11.66$, $p>.20$, $d.f.=33$.

* indicates the level of textbook emphasis: High for 7 or more; middle for 4, 5 and 6; and low for 1, 2 and 3. The values (1 to 7) indicate the estimates of textbook emphasis, that is, the class hours which are intended to be spent on covering the content related to each item from fourth through eighth grades (see Table 4).

** indicates the achievement level of PCT items for eighth-grade students: High for group means above .75; middle for group means of .50 to .75; and low for group means below .50. However, for the items #13a, #13b, #14a, AND #14b the values (i.e., 0.5, 0.75) were obtained by dividing the original means by two, because the possible score was two instead of one.

4.4.2 RELATIONSHIPS BETWEEN TEXTBOOK EMPHASIS AND PCT ITEM ACHIEVEMENT BY REQUIRED REASONING LEVELS FOR EIGHTH-GRADE STUDENTS

Table 46 presents the correlations between textbook emphasis and PCT item achievement for each reasoning level. A consistent relationship was obtained at the concrete reasoning level. Students had high achievement on most items which required concrete reasoning, when there was high textbook emphasis.

Since 98.8 percent of eighth-grade students had reached the concrete reasoning level (see Table 40), the consistent relationship between textbook emphasis and item achievement suggests that high textbook emphasis supports high achievement, if students have reached the required reasoning level for learning the tasks and the test items.

For the items which required the transitional reasoning level, a relatively high relationship between the textbook emphasis and achievement was obtained. Only two items, #19a and #21i, had positive discrepancy scores (both +1). The discrepancy scores were obtained by subtracting textbook emphasis score from the corresponding item achievement score (3 points assigned to high, 2 points assigned to middle, 1 point to low level for textbook emphasis and item achievement). The result can be explained by variables related to the items. Item #19a measured process skills

rather than content. Item #21i could be learned by experiences outside the classroom or in other subject areas.

On the contrary, five transitional items, #7, #13b, #14a, #14b, and #15, got negative discrepancy scores (-1 or -2). Such relatively low achievement could be attributed to (1) lack of required reasoning skills, and/or (2) lack of understanding.

For the items which required formal reasoning, a consistent relationship between textbook emphasis and item achievement was obtained. Based on the results that only 13 percent of eighth-grade students had attained the formal reasoning level (see Table 40) and overall low textbook emphasis was put on these formal items, it could be hypothesized that the high correlation resulted primarily from low emphasis and low achievement.

None of the Chi-square values of the three reasoning level items were significant at the .20 level. The results indicate that the PCT item achievement was consistent with the prediction based upon textbook emphasis on items.

Table 46

RELATIONSHIPS BETWEEN TEXTBOOK EMPHASIS AND ITEM ACHIEVEMENT BY REQUIRED REASONING LEVELS FOR EIGHTH-GRADE STUDENTS

CONCRETE REASONING LEVEL

ITEM	#1	#2	#3	#13a	#21a	#21c	#21d
EMPHASIS*	H	H	H	H	H	H	H
ACHIEVE**	M	H	H	H	H	H	H

χ^2 = 0.5, p>.20, $d.f.$=6.

TRANSITIONAL REASONING LEVEL

ITEM	#4	#5	#7	#8	#11	#12	#13b	#14a	#14b
EMPH.	M	M	M	M	M	M	H	H	H
ACH.	M	M	L	M	M	M	M	L	L

ITEM	#15	#16	#19a	#19b	#21e	#21f	#21g	#21i
EMPH.	H	M	M	M	M	M	M	M
ACH.	M	M	H	M	M	M	M	H

χ^2 = 10.83, p.>.20, $d.f.$=16.

FORMAL REASONING LEVEL

ITEM	#6	#9	#10	#17	#18a	#18b	#20	#21b	#21h	#21j
EMPH.	L	M	M	L	none	none	L	L	L	L
ACH.	L	M	M	L	L	L	L	L	L	L

χ^2 = 2.00, p.>.20, $d.f.$=9.

* indicates the level of textbook emphasis: High for 7 or more; middle for 4, 5 and 6; and low for 1, 2 and 3. The values (1 to 7) indicate the estimates of textbook emphasis, that is, the class hours which are intended to be spent on covering the content related to each item from fourth through eighth grades (see Table 4).

** indicates the achievement level of PCT items for eighth-grade students: High for group means above .75; middle for group means of .50 to .75; and low for group means below .50. However, for items #13a, #13b, #14a and #14b the values (i.e., 0.5, 0.75) were obtained by dividing the original means by two, because the possible score was two instead of one.

4.4.3 RELATIONSHIPS BETWEEN TEXTBOOK EMPHASIS AND PCT ITEM ACHIEVEMENT BY BLOOM'S TAXONOMY LEVELS FOR EIGHTH-GRADE STUDENTS

Table 47 shows the correlations between textbook emphasis and PCT item achievement for eighth-grade students by Bloom's taxonomy levels. None of the Chi-square values for knowledge, comprehension, and application items were significant at the 0.20 level. These test results indicate that the PCT item achievement was consistent with the prediction based upon textbook emphasis for the three Bloom's taxonomy levels.

Table 47

RELATIONSHIPS BETWEEN TEXTBOOK EMPHASIS AND ITEM ACHIEVEMENT BY BLOOM'S TAXONOMY LEVELS FOR EIGHTH-GRADE STUDENTS

KNOWLEDGE

ITEM	#1	#2	#3	#4	#5	#6	#7	#8	#13a	#16	#21a	#21c	#21d
EMPH.*	H	H	H	M	H	L	M	M	H	M	H	H	H
ACH.**	M	H	H	M	M	L	L	M	H	M	H	H	H

χ^2 = 2.00, $p.>.20$, $d.f.$=12.

COMPREHENSION

ITEM	#13b	#14b	#15	#19a	#19b	#20	#21e	#21f	#21g	#21i
EMPH.	H	H	M	M	M	L	M	M	M	M
ACH.	M	L	M	H	M	L	M	M	M	H

χ^2 = 5.17, $p.>.20$, $d.f.$=9.

APPLICATION

ITEM	#9	#10	#11	#12	#14a	#17	#18a	#18b	#21b	#21h	#21j
EMPH.	M	M	M	M	H	L	none	none	L	L	L
ACH.	M	M	M	M	L	L	L	L	L	L	L

χ^2 = 6.00, $p.>.20$, $d.f.$=10.

* indicates the level of textbook emphasis: High for 7 or more; middle for 4, 5 and 6; and low for 1, 2 and 3. The values (1 to 7) indicate the estimates of textbook emphasis, that is, the class hours which are intended to be spent on covering the content related to each item from fourth through eighth grades (see Table 4).

** indicates the achievement level of PCT items for eighth-grade students: High for group means above .75; middle for group means of .50 to .75; and low for group means below .50. However, for items #13a, #13b, #14a and #14b the values (i.e., 0.50, 0.75) were obtained by dividing the original means by two, because the possible score

was two instead of one.

4.4.4 CORRELATION BETWEEN TEXTBOOK EMPHASIS AND PCT ITEM ACHIEVEMENT FOR FIFTH-GRADE STUDENTS

Table 48 shows the correlation between textbook emphasis and the PCT item achievement by item for fifth-grade students. The correlation was significant ($r=0.62$, $p<0.01$). The general tendency was that the students had high achievement on items on which science textbooks put high emphasis; low achievement when there was low emphasis. Some deviant items are discussed in the following subsection.

Table 48

CORRELATION BETWEEN TEXTBOOK EMPHASIS AND PCT ITEM ACHIEVEMENT FOR FIFTH-GRADE STUDENTS

ITEM	#1	#2	#3	#4	#5	#6	#7	#8	#9
EMPHASIS*	H	H	H	M	H	none	L	L	L
ACHIEVE.**	M	H	M	L	M	LL	LL	LL	L

ITEM	#10	#11	#12	#13a	#13b	#14a	#14b	#15
EMPHASIS	L	NONE	NONE	H	H	H	H	NONE
ACHIEVE.	L	L	L	H	L	L	L	LL

ITEM	#16	#17	#18a	#18b	#19a	#19b	#20
EMP.	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ACH.	L	L	L	LL	L	LL	LL

ITEM	#21a	#21b	#21c	#21d	#21e	#21f	#21g	#21h	#21i	#21j
EMPHASIS	M	NONE	M	L	NONE	NONE	NONE	NONE	NONE	NONE
ACHIEVE.	M	LL	H	H	LL	M	LL	LL	M	LL

Correlation coefficient r=0.62, $p.<0.01$, n=33.

$\chi^2 = 26.16$, $p.>.20$, $d.f.=33$.

* indicates the level of textbook emphasis: High for 7 or more; middle for 4, 5 and 6; and low for 1, 2 and 3. The values (1 to 7) indicate the estimates of textbook emphasis, that is, the class hours which are intended to be spent on covering the content related to each item from fourth through fifth grades.

** indicates the PCT achievement level by fifth graders: High for group means above .75; middle for group means of .50 to .75; low for .25 to .50; and low low for below 0.25. However, for the items 13a, b and 14a and b, the values (i.e., 0.50, 0.75) were obtained by dividing the

original means by two, bucause the possible score was two instead of one.

4.4.5 RELATIONSHIPS BETWEEN TEXTBOOK EMPHASIS AND PCT ITEM ACHIEVEMENT BY REQUIRED REASONING LEVELS FOR FIFTH-GRADE STUDENTS

Table 49 presents the relationship between textbook emphasis and PCT item achievement by reasoning levels for fifth-grade students. The item achievement was as follows: middle to high on concrete level items; and low to very low on higher reasoning level items. All Chi-square values for the three reasoning level items were smaller than the critical values at the 0.20 or 0.10 level. The results indicate that PCT item achievement was consistent with the prediction based upon textbook emphasis for each reasoning level.

Of 17 transitional reasoning level items, five items--#4, #5, #13b, #14a and #14b--got negative discrepancy scores (two -1's and three -2's). As explained before, the discrepancy score was obtained by subtracting the textbook emphasis score from the corresponding item achievement score.

At the fifth-grade level, students' reasoning ability could be the principal predictor for failure in the PCT items, for only 45 percent of the students reached the transitional reasoning level (see Table 32).

Two items #21f and #21i of the transitional reasoning level items got positive discrepancy scores (both +2's). The group means for the items were 0.525 and 0.625 respectively. The discrepancies could be explained by students' familiarity with such components as 'nitrogen' and 'fat.' Even though they did not learn their irrelevancy to photosynthesis from the biology sections of the science textbooks, it seemed that the students were familiar with the characteristics or functions of these components through experience. In addition, these components might have been stated in the other sections of the science textbooks or in other subject areas.

On all of formal level items, low levels of achievement were found. Such results could be explained by:(a) only 6.5 percent of fifth-grade students reached the formal reasoning level (see Table 38); and (b) these items have been rarely taught to fifth-grade students (see Table 4).

Table 49

RELATIONSHIPS BETWEEN TEXTBOOK EMPHASIS AND PCT ITEM ACHIEVEMENT BY REASONING LEVELS FOR FIFTH-GRADE STUDENTS

CONCRETE REASONING LEVEL

ITEM	#1	#2	#3	#13a	#21a	#21c	#21d
EMPHASIS*	H	H	H	H	M	H	L
ACHIEVE**	M	H	M	H	M	H	H

χ^2 = 2.33, $p.>.20$, $d.f.$=6.

TRANSITIONAL REASONING LEVEL

ITEM	#4	#5	#7	#8	#11	#12	#13b	#14a	#14b
EMPH.	M	H	L	L	NONE	NONE	H	H	H
ACH.	L	M	LL	LL	L	L	L	L	L

ITEM	#15	#16	#19a	#19b	#21e	#21f	#21g	#21i
EMPH.	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ACH.	LL	L	L	LL	LL	M	LL	M

χ^2 = 21.5, $p.>.10$, $d.f.$=16.

FORMAL REASONING LEVEL

ITEM	#6	#9	#10	#17	#18a	#18b	#20	#21b	#21h	#21j
EMPH.	NONE	L	L	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ACH.	LL	L	L	L	L	LL	LL	LL	LL	LL

χ^2 = 3.00, $p.>.20$, $d.f.$=9.

* indicates the level of textbook emphasis: High for 7 or more; middle for 4, 5 and 6; and low for 1, 2 and 3. The values indicate the estimates of textbook emphasis, that is, the class hours which are intended to be spent on covering the content related to each item from fourth through fifth grades (see Table 4).

** indicates the achievement level of PCT items for fifth-grade students: high for group means above .75; middle for group means of .50 to .75; low for group means .25 to .50; and low low for below .25. However, for items #13a, #13b, #14a, and #14b, the values (i.e., 0.50, 0.75) were obtained by dividing the original means by two, because the possible score was two instead on one.

4.4.6 RELATIONSHIPS BETWEEN TEXTBOOK EMPHASIS AND PCT ITEM ACHIEVEMENT BY BLOOM'S TAXONOMY LEVELS FOR FIFTH-GRADE STUDENTS

Table 50 presents the relationships between textbook emphasis and the item achievement by Bloom's taxonomy levels for fifth-grade students. All Chi-square values of the three cognitive levels were smaller than the critical values with the appropriate degrees of freedom at the 0.20 level. The results indicate that PCT item achievement was consistent with the prediction based upon textbook emphasis for Bloom's taxonomy levels.

Table 50

RELATIONSHIPS BETWEEN TEXTBOOK EMPHASIS AND PCT ITEM ACHIEVEMENT BY BLOOM'S TAXONOMY LEVELS FOR FIFTH-GRADE STUDENTS

KNOWLEDGE

ITEM	#1	#2	#3	#4	#5	#6	#7	#8	#13a	#16	#21a	#21c	#21d
EMPH.*	H	H	H	M	H	NONE	L	L	H	NONE	M	H	L
ACH.**	H	H	M	L	M	LL	LL	LL	H	L	M	H	H

χ^2 -4.33, $p.>.20$, $d.f.$-12.

COMPREHENSION

ITEM	#13b	#14b	#15	#19a	#19b	#20	#21e	#21f	#21g	#21i
EMPH.	H	H	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ACH.	L	L	LL	L	LL	LL	LL	M	LL	M

χ^2 = 13.00, $p.>.20$, $d.f.$-9.

APPLICATION

ITEM	#9	#10	#11	#12	#14a	#17	#18a	#18b	#21b	#21h	#21j
EMPH.	L	L	NONE	NONE	H	NONE	NONE	NONE	NONE	NONE	NONE
ACH.	L	L	L	L	L	L	L	LL	LL	LL	LL

χ^2 = 8.00, $p.>.20$, $d.f.$-10.

* indicates the level of textbook emphasis: High for 7 or more; middle for 4, 5 and 6; and low for 1, 2 and 3. The values indicate the estimates of textbook emphasis, that is, the class hours which are intended to be spent on covering the content related to each item from fourth through fifth grades (see Table 4).

** indicates the achievement level of PCT items for fifth-grade students: High for group means above .75; middle for group means of .50 to .75; low for group means of .25 to 0.50; and low low for below .25. However, for items 13a, 13b, 14a, and 14b, the values (i.e., 0.50, 0.75) were obtained by dividing the original means by two, because

the possible score was two instead of one.

4.5 CORRELATION AND REGRESSION ANALYSES

This section includes correlation results and multiple regression results of selected significant varialbes

4.5.1 CORRELATION RESULTS FOR FIFTH-GRADE STUDENTS

Table 51 presents the correlational results for fifth-grade students regarding sex, educational level of fathers (F), educational level of mothers (M), the most recent science grade (SCT), average science grade in previous years (SCL), attitude toward science class this year (FUNT) and in previous years (FUNL), science learning based on how much they felt they learned science from classes this year (EPIS), the PLRT achievement (PTL) and the PCT achievement (BTL), both indicated by the total scores . The variables which are not included in the matrix of Table 51 can be found in the overall matrices of Appendix F.

Sex was not significantly correlated with the other variables.

Educational levels of fathers and mothers were positively and significantly correlated with science grades and the PLRT achievement, but not significantly with the PCT achievement at the 0.01 level.

Science grades this year and in previous years were positively and significantly correlated with the other variables at the 0.01 level.

Attitude toward previous science classes was positively and significantly correlated with science learning, PLRT and PCT achievement at the 0.05 level.

Attitude toward science classes this year was positively and significantly correlated with science learning, but not significantly with PLRT nor PCT achievements at the 0.05 level.

Science learning was positively and significantly correlated with PLRT and PCT achievements at the 0.01 level.

PLRT achievement was positively and significantly correlated with PCT achievement at 0.000 level.

4.5.2 CORRELATION RESULTS FOR EIGHTH-GRADE STUDENTS

Table 52 presents the correlation results for eighth-grade students with the same variables as Grade 5 students.

Sex was positively and significantly correlated with PLRT and PCT achievements and science grades this year and in previous years, attitude toward science class and science learning this year at the 0.01 level. The results favored male students.

All the other variables included in the correlation matrix were positively and significantly correlated at the 0.05 level to each other except attitude toward science classes. The variables which are not included in the matrix of Table 52 can be found in the overall matrices of Appendix G.

Table 51

CORRELATION MATRIX FOR GRADE 5 STUDENTS (N - 187)

	SEX	F	M	SCT	SCL	FUNL	FUNT	EPIS	PTL	BTL
SEX	1.000	.004	.020	-.044	-.017	.049	-.107	-.118	-.046	.074
	.999	.478	.393	.276	.406	.254	.073	.054	.265	.156
F		1.000	.597	.325	.197	.100	.015	.020	.246	.022
		.999	.000	.000	.003	.086	.419	.395	.000	.384
M			1.000	.266	.239	.133	.036	.046	.217	.108
			.999	.000	.000	.034	.314	.268	.001	.076
SCT				1.000	.637	.196	.244	.317	.387	.219
				.999	.000	.004	.000	.000	.000	.001
SCL					1.000	.234	.111	.246	.320	.287
					.999	.001	.066	.000	.000	.000
FUNL						1.000	.228	.206	.193	.144
						.999	.001	.002	.004	.025
FUNT							1.000	.566	.106	.101
							.999	.000	.075	.085
EPIS								1.000	.194	.232
								.999	.004	.001
PTL									1.000	.443
									.999	.000
BTL										1.000
										.999

Table 52

CORRELATION MATRIX FOR GRADE 8 STUDENTS (N - 208)

	SEX	F	M	SCT	SCL	FUNL	FUNT	EPIS	PTL	BTL
SEX	1.000	.103	.099	.210	.184	-.005	.270	.169	.154	.276
	.999	.069	.078	.001	.004	.469	.000	.007	.013	.000
F		1.000	.618	.368	.324	.030	.085	.238	.329	.344
		.999	.000	.000	.000	.334	.112	.000	.000	.000
M			1.000	.246	.231	.009	.142	.203	.190	.155
			.999	.000	.000	.448	.020	.002	.003	.013
SCT				1.000	.740	.088	.274	.402	.354	.547
				.999	.000	.103	.000	.000	.000	.000
SCL					1.000	.218	.184	.327	.361	.496
					.999	.001	.004	.000	.000	.000
FUNL						1.000	.106	.255	.212	.125
						.999	.064	.000	.001	.036
FUNT							1.000	.306	.220	.153
							.999	.000	.001	.014
EPIS								1.000	.314	.282
								.999	.000	.000
PTL									1.000	.483
									.999	.000
BTL										1.000
										.999

4.5.3 REGRESSION RESULTS FOR FIFTH-GRADE STUDENTS

Table 53 indicates the regression results of the selected student background variables and PLRT achievement on PCT achievement for fifth-grade students. PLRT achievement accounted for about 20 percent of the variance of PCT achievement. Previous science grades accounted for additional two percent of the variance.

Table 53

REGRESSION RESULTS OF STUDENT BACKGROUND VARIABLES AND THE PLRT ACHIEVEMENT ON THE PCT ACHIEVEMENT FOR FIFTH-GRADE STUDENTS

1. PTL

MULTIPLE R	.44259
R SQUARE	.19588
ADJUSTED R SQUARE	.19154
STANDARD ERROR	3.69173

ANALYSIS OF VARIANCE

	DF	SUM OF SQUARES	MEAN SQUARE
REGRESSION	1	614.20083	614.20083
RESIDUAL	185	2521.33927	13.62886

F = 45.06619 SIGNIF F = .0000

VARIABLES IN THE EQUATION

VARIABLE	B	SE B	BETA	T	SIG T
PTL	.871399	.129805	.442587	6.713	.0000
(CONSTANT)	9.440400	.973873		9.694	.0000

PTL PLRT achievement, as indicated by its total score

Table 53 continued

2. SCL

MULTIPLE R	.46822
R SQUARE	.21923
ADJUSTED R SQUARE	.21074
STANDARD ERROR	3.64762

ANALYSIS OF VARIANCE

	DF	SUM OF SQUARES	MEAN SQUARE
REGRESSION	2	687.40087	343.70044
RESIDUAL	184	2448.13924	13.30510

F = 25.83222 SIGNIF F = .0000

VARIABLES IN THE EQUATION

VARIABLE	B	SE B	BETA	T	SIG T
PTL	.769663	.135390	.390915	5.685	.0000
SCL	1.494886	.637326	.161293	2.346	.0201
(CONSTANT)	5.920937	1.782508		3.322	.0011

VARIABLES NOT IN THE EQUATION

VARIABLE	BETA IN	PARTIAL	MIN TOLER	T	SIG T
SEX	.095260	.107693	.895726	1.465	.1445
F	-.115027	-.125127	.862588	-1.706	.0897
M	-.019486	-.021163	.867108	-.286	.7749
SCT	-.062862	-.053115	.557423	-.720	.4727
FUNL	.032968	.035974	.866415	.487	.6269
FUNT	.042248	.047386	.891383	.642	.5218
EPIS	.126313	.137471	.862348	1.878	.0620

SEX Sex of students (male coded one; female coded zero)
F Educational level of fathers
M Educational level of mothers
PTL PLRT achievement
SCT Science grade this year
SCL Average science grade in previous years
FUNT Attitude toward science class this year
FUNL Attitude toward science class in previous years
EPIS Science learning this year

4.5.4 REGRESSION RESULTS FOR EIGHTH-GRADE STUDENTS

Table 54 presents the regression analysis results of student background variables and the PLRT achievement on the PCT achievement for eighth-grade students. Science grade this year accounted for 30 percent of the variance of PCT achievement. PLRT achievement accounted for nine percent of the variance.

The results of regression analysis for both grade levels showed that previous learning and Piagetian reasoning ability accounted for the most portion of the explicable variance of the PCT achievement. However, previous learning was the best predictor of the PCT achievement at the eighth grade, while Piagetian logical reasoning ability was the best predictor at the fifth grade. It suggests that students of low reasoning level were affected by reasoning skills required for understanding concepts more than the previous learning; students of higher reasoning level were affected by previous learning more than the required reasoning skills.

Table 54

REGRESSION RESULTS OF STUDENT BACKGROUND VARIABLES AND THE PLRT ACHIEVEMENT ON THE PCT ACHIEVEMENT FOR EIGHTH-GRADE STUDENTS

1. SCT

MULTIPLE R	.54691
R SQUARE	.29911
ADJUSTED R SQUARE	.29571
STANDARD ERROR	4.50470

ANALYSIS OF VARIANCE

	DF	SUM OF SQUARES	MEAN SQUARE
REGRESSION	1	1783.96737	1783.96737
RESIDUAL	206	4180.22013	20.29233

F = 87.91338 SIGNIF F = .0000

VARIABLES IN THE EQUATION

VARIABLE	B	SE B	BETA	T	SIG T
SCT	2.695069	.287437	.546912	9.376	.0000
(CONSTANT)	11.513144	1.065285		10.808	.0000

2. PTL

MULTIPLE R	.62847
R SQUARE	.39497
ADJUSTED R SQUARE	.38907
STANDARD ERROR	4.19553

ANALYSIS OF VARIANCE

	DF	SUM OF SQUARES	MEAN SQUARE
REGRESSION	2	2355.67716	1177.83858
RESIDUAL	205	3608.51034	17.60249

F = 66.91318 SIGNIF F = .0000

VARIABLES IN THE EQUATION

VARIABLE	B	SE B	BETA	T	SIG T
SCT	2.116938	.286285	.429592	7.395	.0000
PTL	.906037	.158981	.331091	5.699	.0000
(CONSTANT)	5.781899	1.412708		4.093	.0001

Table 54 continued

3.. SEX

MULTIPLE R	.64361
R SQUARE	.41424
ADJUSTED R SQUARE	.40562
STANDARD ERROR	4.13830

ANALYSIS OF VARIANCE

	DF	SUM OF SQUARES	MEAN SQUARE
REGRESSION	3	2470.57712	823.52571
RESIDUAL	204	3493.61038	17.12554

F = 48.08757 SIGNIF F = .0000

VARIABLES IN THE EQUATION

VARIABLE	B	SE B	BETA	T	SIG T
SCT	1.992463	.286440	.404332	6.956	.0000
PTL	.870423	.157414	.318077	5.530	.0000
SEX	1.527218	.589608	.142497	2.590	.0103
(CONSTANT)	5.794510	1.393446		4.158	.0000

VARIABLES NOT IN THE EQUATION

VARIABLE	BETA IN	PARTIAL	MIN TOLER	T	SIG T
F	.092528	.109440	.783517	1.569	.1183
M	-.020291	-.025510	.820336	-.364	.7166
SCL	.126350	.109647	.439522	1.572	.1176
FUNL	.023464	.029931	.834058	.427	.6701
FUNT	-.076293	-.092714	.821663	-1.327	.1861
EPIS	-.004946	-.005779	.766851	-.082	.9345

F Educational levels of fathers
M Educational levels of mothers
SCT Science grade this year
PTL PLRT achievement, as indicated by the total score
SCL Average science grade in previous years
FUNT Attitude toward science class this year
FUNL Attitude toward science class in previous years
EPIS Science learning this year

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents a summary of the study, testing of hypotheses, conclusions, recommendations for future research and for practices.

5.1 SUMMARY

This study was designed to examine students' understandings related to photosynthesis and to investigate the relationships between students' understandings, Piagetian logical reasoning ability, textbook emphasis and student background variables, that is, sex, educational levels of parents, science grades, attitudes toward science, extracurricular activities, science learning, and science learning style.

The Photosynthesis Concepts Test (PCT) was developed as the means of evaluating students' understandings of concepts related to photosynthesis. Items were developed based upon six concept divisions or clusters which were identified through concept mapping, that is, 1) plant and animal identification, 2) characteristics of green plants,

3) plant structure and its corresponding functions, 4) conditions for photosynthesis, 5) photosynthetic processes and 6) photosynthetic products. The test was revised as a result of a pilot study with American students and comments from reviewers.

Piagetian Logical Reasoning Test (PLRT) was developed to assess students' reasoning skills involved in the PCT, that is, control of variables, combinatorial reasoning and correlational reasoning. The test items were constructed based on the applications specified for each reasoning skills at each reasoning level, concrete, transitional and formal.

A questionnaire was also developed to gather information pertaining to student background variables and attitudes toward science.

For the purpose of investigating the relationship between textbook emphasis and students' understandings of concepts, Korean science textbooks from fourth through eighth grade were analyzed in terms of class hours which were intended to be spent for covering the PCT item contents.

The three instruments were administered in 1987 to 201 fifth- and 239 eighth-grade Korean students in two elementary and two junior high schools in Seoul, Korea.

All the possible variables in the questionnaire were coded dichotomously (67 possible variables for fifth- grade and 71 possible variables for eighth-grade students), and all the responses to the PCT and the PLRT were also coded dichotomously.

Based on frequency analysis, some variables which had very low frequency and extreme degree of kurtosis and skewness were deleted on further analysis. Correlation procedure was employed to find out any consistnet relationships between variables (see Appendices F and G for the correlation matrices for fifth-grade and eighth-grade students, respectively).

The selected consistent variables were combined and coded with weight and subjected to correlation and regression analyses.

Separately from the above analyses, the relationship between textbook emphasis and the PCT achievement was investigated through correlation and chi-square analyses.

5.2 SUMMARY OF DESCRIPTIVE ANALYSIS RESULTS

1. The educational level of fathers of the participating students was very high. Eighty one percent of fathers of fifth grade, and 32 percent of fathers of eighth grade completed a college level education.

2. Mothers of the participating students were well educated, even though not as high as the fathers. Sixty one percent for fifth grade and 12 percent for eighth grade completed a college level education.
3. Seventy seven and 87 percent of fifth-grade students, respectively, reported receiving high science grade this year (1987) and in previous years.
4. Over 50 percent of eighth-grade students reported receiving higher science grades (A or B) this year (1987) and in previous years; about 15 percent of the students reported lower grades (D or F) this year and in previous years.
5. Grading patterns for other subjects appeared to be similar to science grades for both groups.
6. Sixty-eight percent of fifth-grade students felt that they learned a lot of science this year (1987); only five percent felt they learned very little.
7. Forty percent of eighth-grade students felt that they learned a lot of science this year; 16 percent felt they learned very little.
8. Thirty-five and 42 percent of fifth-grade students, respectively, reported that they always liked science classes this year and in previous years respectively; 17 and three percent of the students reported never or rarely liking science classes this year and in previous years, respectively.

9. Twenty-nine and 16 percent of eighth-grade students reported that they always liked science classes this year and in previous years respectively; 13 and 22 percent of the students reported never or rarely liking science classes this year and in previous years, respectively.
10. Eighty-four percent of fifth-grade students and 50 percent of eighth-grade students indicated that science was their favorite or second favorite subject.
11. Seventy percent of fifth-grade male and 40 percent of fifth-grade female students planned to take additional science courses in the future; 57 percent of eighth-grade males and 32 percent of eighth-grade female students did.
12. Most frequent science-related activities for fifth-grade students were: 1) read science articles in magazines or books (78 percent); 2) watch science T.V. programs (65 percent); and 3) read science articles in newspapers (53 percent).
13. Most frequent science-related activities for eighth-grade students were: 1) watch science T.V. programs (70 percent); and 2) read science articles in magazines or books (59 percent).
14. The most favorite learning styles for fifth- and eighth-grade students were in common 1) doing labora-

tory activities and 2) listening to lectures. Ten percent or less of the students selected each of 'working in outdoor activities,' 'working in a group' and 'reading by myself' as their favorite learning style.

15. The mean of the PLRT for fifth-grade students was 7.104 and standard deviation was 2.153; for eighth-grade students 8.492 and 1.995, respectively. (The possible score was 12).

16. Forty-five percent of fifth-grade students and 75 percent of eighth-grade students were at the transitional level.

17. The mean of the PCT for fifth-grade students was 15.670, and standard deviation was 4.102; for eighth-grade students, 20.986 and 5.360, respectively. (The possible score was 34).

18. For overall items of the PCT, eighth-grade students achieved at one or more upper group mean levels or at the same level, compared with fifth-grade students, as the group means of the items were divided into four levels; below 0.25, between 0.25 and 0.50, between 0.51 and 0.75 and above 0.75.

5.3 TESTING OF HYPOTHESES

Data drawn from the analyses of the study were employed in the acceptance or rejection of the null hypotheses stated in Chapter One. Analyses follow each of the hypotheses.

5.3.1 HYPOTHESIS ONE

Hypthesis One: There are no significant differences in students' understandings of concepts related to photosynthesis between fifth- and eighth-grade students.

The Photosynthesis Concepts Test (PCT) was developed to evaluate students' understandings of concepts related to photosynthesis, and administered to 201 fifth-grade and 239 eithth-grade students.

Multivariate analysis was employed to compare the achievements of the PCT overall items of fifth- and eighth-grade students. Eighth-grade students achieved significantly higher means than fifth-grade students ($p < .0000$) on the overall items (see Appendix H).

Univariate analysis using F-test showed that eighth-grade students achieved significantly higher means on 17 out of a total of 34 items; higher, but not significantly, on six items. Fifth-grade students achieved significantly higher means on two items of Cluster One than eighth-grade students. The remaining nine items were not appropriate for statistical analysis because of low level or high level of performance that could not be analyzed.

Based on the result of multivariate and univariate analyses, Hypothesis One was rejected.

5.3.2 HYPOTHESIS TWO

Hypothesis Two: There is no significant relationship between students' understanding of concepts and the textbook emphasis on the concepts.

Korean science textbooks from fourth through eighth grades were analyzed in terms of the emphasis of the PCT item contents. Correlation and chi-square analyses were employed for determining the relationship between textbook emphasis and the PCT achievement by item.

The correlation coefficients (r=0.62 and 0.67 for fifth and eighth grades, respectively) were positively significant at the 0.001 level.

Chi-square analysis results showed that the PCT items were achieved consistently with the prediction based upon textbook emphasis on the items.

Based upon the correlation and chi-square analysis results, Hypothesis Two was rejected.

5.3.3 HYPOTHESIS THREE

Hypothesis Three: There is no significant relationships between students' understandings of concepts and the Piagetian logical reasoning ability.

The Piagetian Logical Reasoning Test was developed to assess students' logical reasoning skills required for completing the PCT items.

The correlation coefficients of 0.443 and 0.483 with the PCT total score were obtained for fifth- and eighth-grade students, respectively ($p < 0.000$).

For the fifth grade, the variable of logical reasoning ability was out first for the multiple regression, explaining about 19 percent of the variance of the BCT achievement. For the eighth grade, the variable was out second for the multiple regression, explaining significant variance of the BCT achievement; prior learning became more important at the eighth-grade level. Based upon the correlation and regression analysis results, Hypothesis Three was rejected.

5.3.4 HYPOTHESIS FOUR

Hypothesis Four: There are no significant relationships between students' understandings of concepts and student background variables such as sex, educational levels of parents, science grades, attitudes toward science, extracurricular activities, science learning, and science learning style.

A questionnaire was designed to gather information about the variables stated in Hypothesis Four.

For fifth-grade students, science grades this year (1987) and in previous years, attitude toward previous science classes, and science learning reported were positively and significantly correlated with the PCT achievement ($p < 0.05$).

For eighth-grade students, sex of students, educational levels of fathers and mothers, science grades this year (1987) and in previous years, liking science classes, and science learning reported were positively and significantly correlated with the PCT achievement ($p < 0.05$).

Based upon the correlation results, Hypothesis Four was rejected, but regression results suggest several of the background variables are closely related to prior learning and reasoning development. For the fifth-grade level, when reasoning ability and prior learning were removed, no background variables with significant variance remained. For the eighth-grade level, when prior learning and logical reasoning ability were removed, only sex provided a significant addition to the variance.

5.3.5 HYPOTHESIS FIVE

Hypothesis Five: There is no significant difference between fifth- and eighth-grade levels in terms of order and kind of the variables which account for most of the student's understandings of concepts of photosynthesis.

The variables which were consistently significant in correlation analysis were selected and subjected to multiple regression analysis.

For fifth-grade students, the PLRT achievement (PTL) accounted for about 20 percent of the variance of the PCT achievement (BTL). Previous science grades (SCL) accounted for additional two percent of the variance.

For eighth-grade students, science grade this year (SCT) accounted for about 30 percent of the variance of PCT achievement. PTL accounted for 10 percent of the variance. Sex added 2 percent to the variance.

Based upon the regression analysis results, Hypothesis Five was rejected. Variables related to student understanding did change. The impact of school instruction on science learning was significantly greater at eighth grade.

5.4 CONCLUSIONS AND DISCUSSIONS

This section includes explanation of the hypotheses and comparison of the study results with the findings from literature related.

5.4.1 PERSISTENT MISCONCEPTIONS

The results of study indicated that most students had misconceptions of phenomena related to photosynthesis.

5.4.1.1 Misconceptions Identified in the Study

1) Misconceptions of the phrase "making food" (item #1)-- Half of both group students could not match "making food" to the unique function of plant. Eighth-grade students misinterpreted "making food" into the process that animals search for and catch their preys.

Misconception of the definition of food--Most of both group students showed that food is something edible so that people can eat or drink. They responded that plants obtain food "by absorbing minerals and nutrients via roots," "by absorbing water," and "by making food for themselves" (item #7).

For the function of light in relation to photosynthesis, light was a source of energy for plants, but not absolutely needed by plants. "Plants can survive without light, but look weak, unhealthy, or turn yellow." Many eighth-grade students rather answered the function of light in terms of response of plants toward light. The typical response was "Plants grow toward the source of light, but without light, plants grow straight."

Misconceptions of the functions of roots (item #5)-- Half of both group students related the function of roots with light, air, or warmth. "Roots absorb warmth," "Roots capture light which penetrates into the soil," or "Roots absorb air which is immersed into the soil."

Misconceptions of the functions of leaves (item #6)-- Nearly all of the students had misconceptions of functions of leaves. They related the functions of plants to "catching dew or rain," "capturing warmth of the sun," and "shading the tender younger shoots from the hot sun."

Misconceptions on photosynthetic products (item #8)-- Especially at the fifth grade, students' responses on this item was that the other materials than glucose, such as protein, vitamin and/or carbon dioxide are the products of photosynthesis; Carbon dioxide is a gas released during the process of photosynthesis (item #16).

Misconceptions of requirements of elements for photosynthesis (items #21b, #21e, #21f, #21g, #21h, #21i)-- Glucose, protein, fat and nitrogen are required for photosynthesis; magnesium and iron are not required for photosynthesis. Eighth-grade students learned regarding the necessity of the minerals of magnesium and iron for plant growth. However, they did not relate the knowledge with the photosynthesis.

Misconception of animal identification (item #1)-- In validation interview, eighth-grade students showed their undergeneralization of the concept of animal. They gave only mammals with four legs when they were asked to give names of five animals.

5.4.1.2 Common Misconceptions at Both Grade Levels

The meaning of "making food," the definition of food, the way plants get food, the functions of light in relation to photosynthesis, the function of roots and leaves, and the relevancy of magnesium and iron to photosynthesis were concepts in which more than half of both group students showed misconceptions. Most of these concepts were related to students' misperceptions of phenomena around them.

5.4.1.3 Comparison of These Findings with Literature

The persistency of misconceptions of the way plants get food was found by several studies (Roth, 1984; Smith and Anderson, 1984a and 1984b; and Wandersee, 1985). Roth's study on the definition of food revealed fifth-grade students' misconceptions; this study showed the same misconceptions were still held by eighth-grade students.

Research findings by Murr (1986), Halsam and Treagust (1987), Wandersee (1985), and Bell (1985) revealed misconceptions which older students held in higher level concepts of photosynthesis. The results of this study were consistent to these findings.

Undergeneralization of the concept of animal in spite of formal instruction was revealed by Trowbridge and Mintzes (1985), Murr (1986), and Bell (1981). By comparison of two groups, this study showed the confused conceptions of animal by older group students.

5.4.2 IMPROVEMENT OF STUDENTS' CONCEPT UNDERSTANDING AT THE UPPER LEVEL

5.4.2.1 Items Improved by Eighth-Grade Students

Most of the items on which eighth-grade students showed much improvement compared with fifth-grade students belonged to three concept clusters, Four, Five and Six which indicated conditions for photosynthesis, photosynthetic processes and photosynthetic products, respectively.

These items were regarding specific explanation on how plants use light (#13b and #14b), photosynthetic processes in a system and interaction of organisms in the system (#9, #10, #11, #12), specific products of photosynthesis (#8, #16, #20), knowledge of glucose, protein, fat and nitrogen (#21e, #21f, #21g, #21i), and the ability to read graph in an experiment (#19a and #19b).

These items had common characteristics in that they obtained high textbook emphasis at upper grade levels and they required higher reasoning level.

5.4.2.2 Major Things Related to Reduction of Misconceptions between Lower and Upper Levels

The results of the study showed that the major variables related to reduction of misconceptions were instruction and development of logical reasoning ability. Through the impact of the two variables , students seemed to become

familiar with new experimental situations and obtain knowledge of unfamiliar terms or concepts; they could apply their knowledge to unfamiliar situations and predict results based on the existing data.

5.4.2.3 Comparison of These findings with Literature Findings

In terms of both general improvement of student learning by instruction (Second International Mathematics Study, 1985; Combers and Keeves, 1973; and Cho, 1984) and reduction of misconceptions at upper grade levels (Halsam and Treagust, 1987; Wandersee, 1985; and Simpson and Arnold, 1982), the results of the study was consistent with literature findings.

However, in some specific concepts such as the definition of food, misconception studies found little instructional impact on reduction of misconceptions, as did this study (Adeniyi, 1985; Roth, 1985; and Friedler et al., 1985).

The relevancy of Piagetian logical reasoning ability to reduction of misconceptions was also shown in other studies (Wheeler and Kass, 1978; Champagne, Klopfer, and Anderson, 1978 ; and Shayer and Wylam, 1981).

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

As explained in Chapter One, this study has an instrumental importance for future misconceptions study in Korea. Based on results of this study, more detailed and focused research can be made.

The following are recommended for future research:

1. Replication studies involving the same levels of students, but with locations of suburban and rural areas other than innercity.
2. Replication studies with other grade levels such as senior high school and college level.
3. The change of misconceptions is to be studied relating to testbooks used at senior-high school level, for several science textbooks are used at the level in Korea, while only one science textbook is used at the level of elementary and junior-high levels.
4. Investigations with other concepts judged fundamental for understanding biology within the same construct as this study's.
5. Experimental studies on change of students' identified misconceptions by modifications of instructional conditions in terms of the abstractness, appropriateness for conceptual change, and reasoning ability required.
6. Investigations of misconceptions held by across age levels in terms of the explanations of causes result-

ing in persistent misconceptions: i.e., 'perceptually misconceived,' 'logically misconceived,' lack of knowledge,' 'lack of skill to apply knowledge' or 'underdevelopment of logical reasoning ability.'

7. Investigations of Korean science curriculum for the purpose of explaining the decrease in attitude toward science and little progress in achievement on some content from fifth through eighth grades.
8. Investigations on the contributions of previous knowledge and logical reasoning level on achievement according to demands of learning tasks.

5.6 RECOMMENDATIONS FOR PRACTICES

For school instruction to be designed to improve students' misunderstandings and to increase their understandings,

1. emphasize what you want to teach.
2. know at what reasoning level your students are.
3. analyze learning tasks in terms of reasoning levels and skills required.
4. teach skills required if students are deficient of the skills.
5. teach the learning tasks at lower reasoning level, that is, at the concrete level in the case of tasks requiring transitional reasoning level, and at the

concrete or transitional level in the case of tasks requiring formal reasoning level.

6. use hands-on activities, provide step-by-step instructions in a lengthy procedure and provide reference to familiar actions, objects, and observable properties (Karplus, 1979).
7. articulate science curriculum throughout grade levels in order that students' understanding on certain concepts can be connected to new knowledge within new context.

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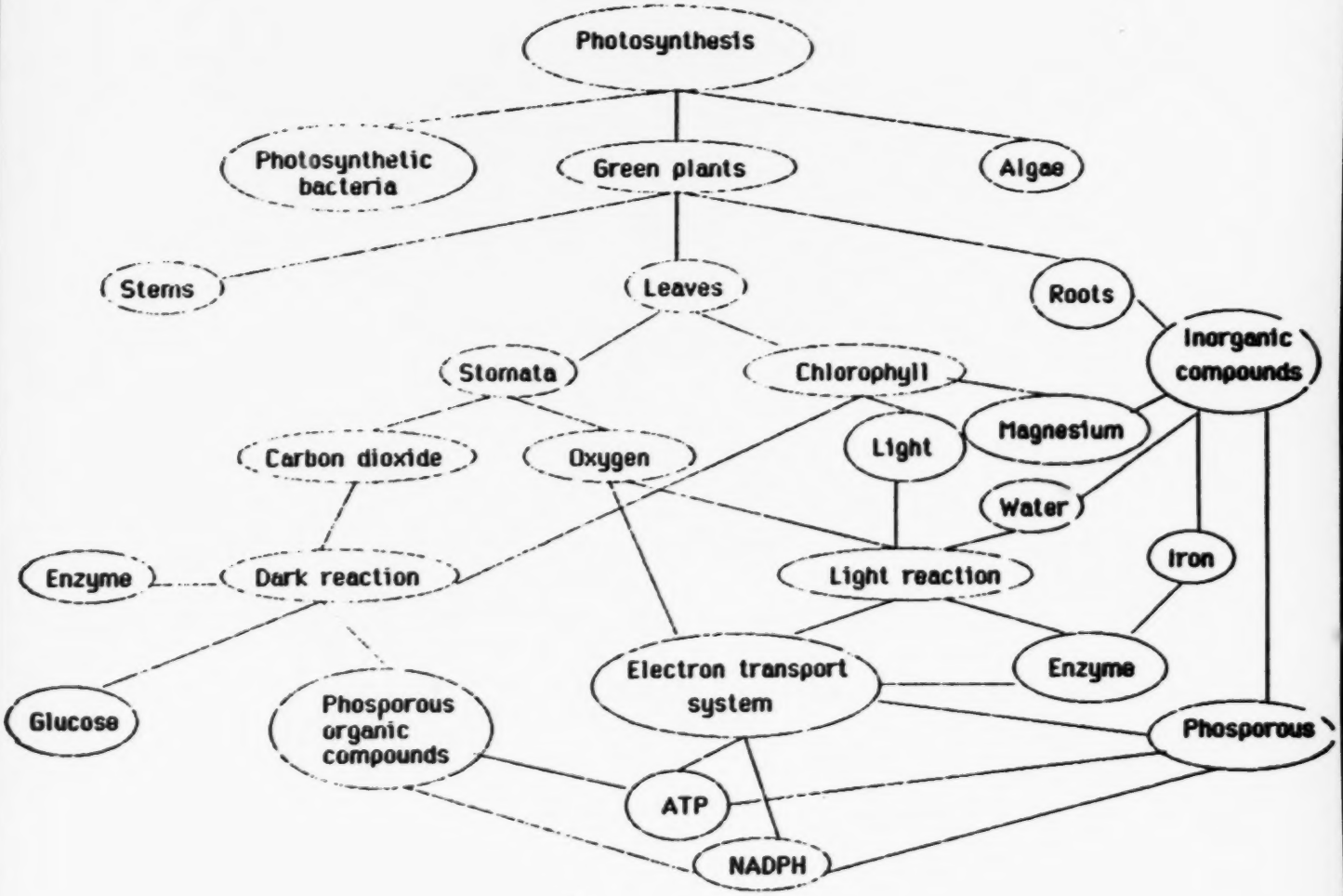
Appendix A

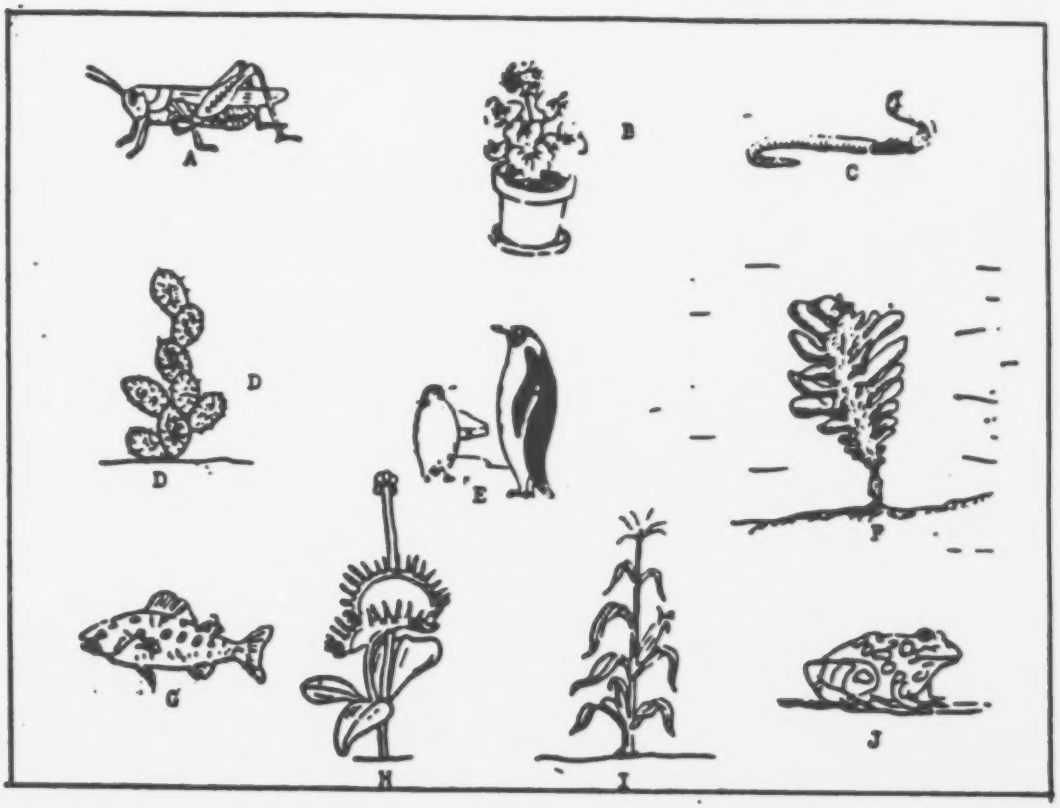
CONCEPT MAP OF PHOTOSYNTHESIS CONCEPT


Photosynthesis
Photosynthetic bacteria
Green plants
Algae
Stems
Leaves
Roots
Inorganic compounds
Stomata
Chlorophyll
Magnesium
Light
Carbon dioxide
Oxygen
Water
Iron
Enzyme
Dark reaction
Light reaction
Electron transport system
Enzyme
Glucose
Phosporous organic compounds
Phosporous
ATP
NADPH

Appendix B

PHOTOSYNTHESIS CONCEPTS TEST (PCT)

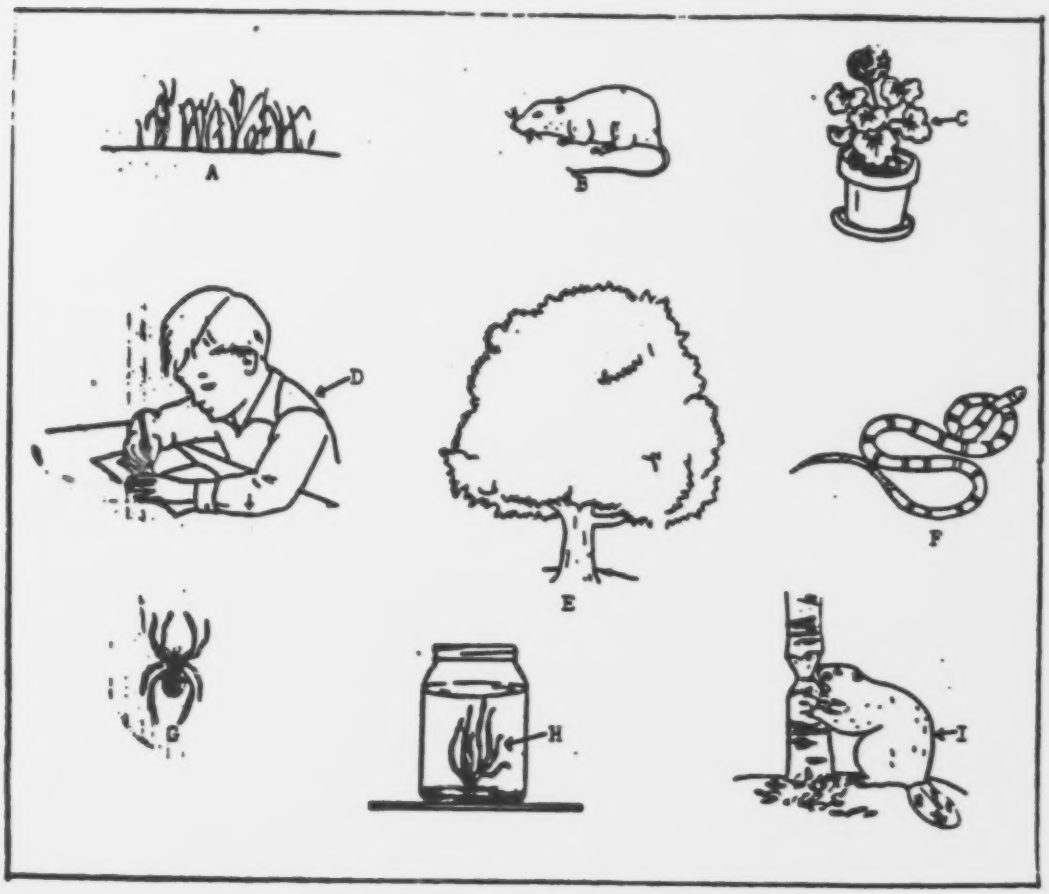
Questions 1 and 2 are based upon the pictures below which show several kinds of living things. Answer each question using letters (e.g., A,B,D).



1.Which are animals?

2.Which are plants?

Questions 3 and 4 are based upon the pictures below which show several kinds of living things. Answer each question using letters (e.g., A,B,D).



3.Which have chlorophyll?

_____

4.Which can make their own food?

_____

5.What are the functions of plant roots?
(Please circle all of the correct answers.)
A.absorb water
B.absorb the air which is immersed into the soil
C.absorb the nutrients which are dissolved in water
D.capture the light which penetrates into the soil
E.capture the warmth from the soil to keep plants warm

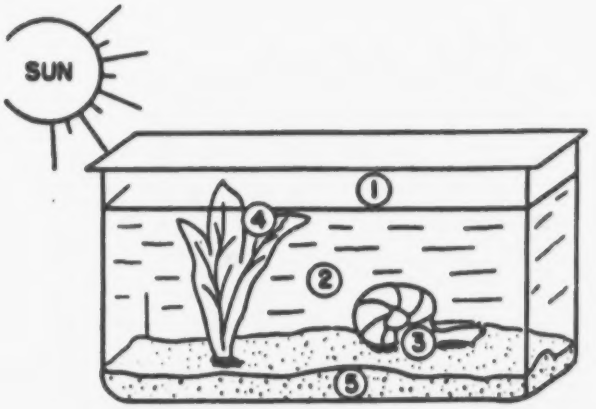
6.What are the functions of green leaves of plants?
(Please circle all of the correct answers.)
A.make sugar
B.allow gases to enter or leave plants
C.catch rain and dew to provide water to plants
D.capture the warmth of the sun
E.shade the tender young shoots of the plants from the hot sun

7.How do green plants get their food?_____
---------Examples----------
a.by absorbing minerals and nutrients from soil
b.by absorbing water
c.by making the food for themselves

A.a B.b C.c D.a,b E.a,c F.b,c G.a,b,c

8.What is the end product of photosynthesis?_____
A.water B.vitamin C.protein D.glucose
E.carbon dioxide F.I don't know

Questions 9-12



In this sealed acquarium, circle 1 represents the enclosed air above water surface, circle 2 represents water in the acquarium, circle 3 represents a snail living in water, circle 4 represents a water plant, and circle 5 represents soil. Please answer the following questions.

9.Assume that the proper balance of plant and animal life has been placed in the acquarium before sealing it. It will be possible for life to continue in the acquarium_____.
  A.until the original oxygen supply of the air above the water is used up, but not longer.
  B.until the original supply of oxygen dissolved in the water has been used up, but no longer.
  C.at most, not more than two months
  D.until the original supply of nitrogen in the soil at the bottom is used up, but not longer
  E.indefinitely as long as the sun shines regularly on the acquarium and the temperature stays above freezing

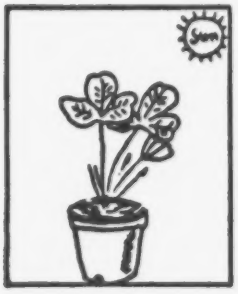
10.Energy first enters the cycle within the acquarium at _____.
  A.1 B.2 C.3 D.4 E.5

11.The oxygen in the acquarium is supplied at_____.
  A.1 B.2 C.3 D.4 E.5

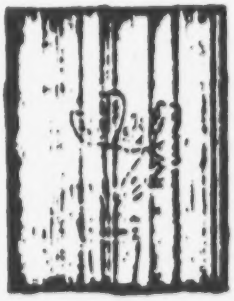
12.Carbon dioxide is utilized as a raw material at _____.
  A.1 B.2 C.3 D.4 E.5

Questions 13-14
Laura planted two clover plants. She put one plant in the light room and the other plant in the dark room. She watered them once two days.

Light



Dark



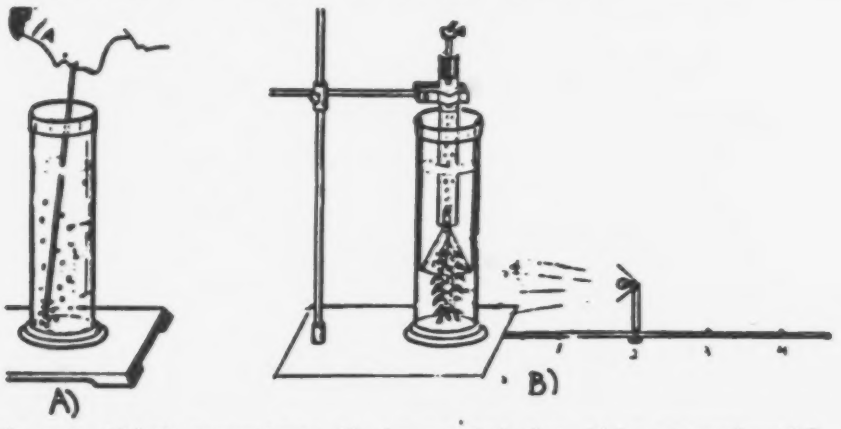
13.After a month, what do you predict would have occurred to the plant in the light room?_____
_____

Explain why you predicted so (Be specific and in detail in your explanation).
_____
_____
_____

14.After a month, what do you predict would have occurred to the plant in the dark room?_____
_____

Explain why you predicted so (Be specific and in detail in your explanation).
_____
_____
_____

Questions 15 to 19
The following pictures depict an experimental procedure concerning photosynthesis. A)A student breather out into the water in the glass column.B)And then, a broken shoot of a water plant is upside down in just the water of the procedure A) as pictured below. And a white light bulb ir installed on a long stand with a measure.



15.Why do you think procedure A) is needed for this experiment?

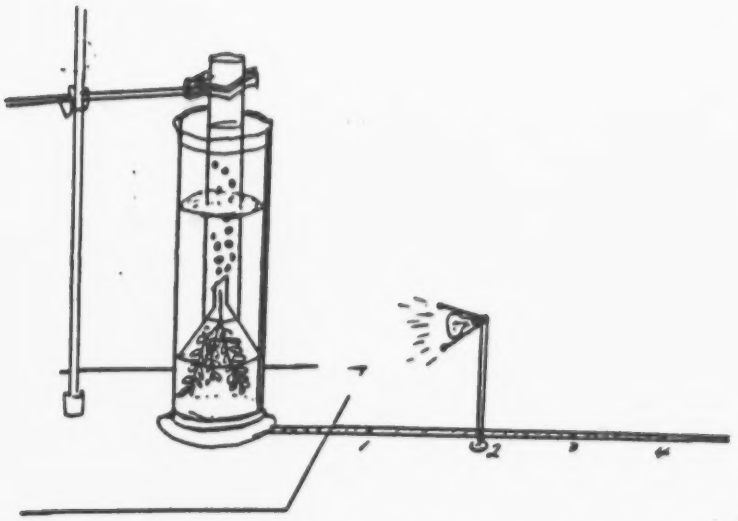
_____

_____

16.What are the bubbles released in procedure B)?_____

A.oxygen B.nitrogen C.carbon dioxide D.air

E.I don't know.



17.Assume that light is a key factor influencing on the gas release Which could result in a four fold increase in the amount of the gas within a given time?_____

A.Double the distance between plant and light
B.Decrease by one-half the distance between plant and light
C.Decrease by one-quarter the distance between plant and light
D.Increase the temperature by 10 C
E.I don't know.

18.In the picture above, a green bulb of the same light intensity replaced the white bulb. What change will occur in the amount of the gas released within a given time?_____

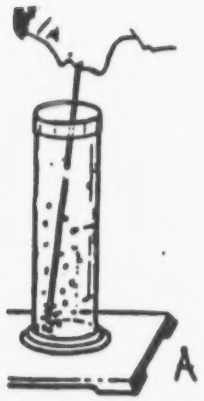
A.The gas will be released more
B.No change will occur
C.The gas will be released less

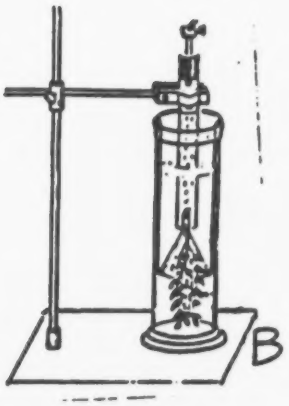
Explain your answer._____

_____

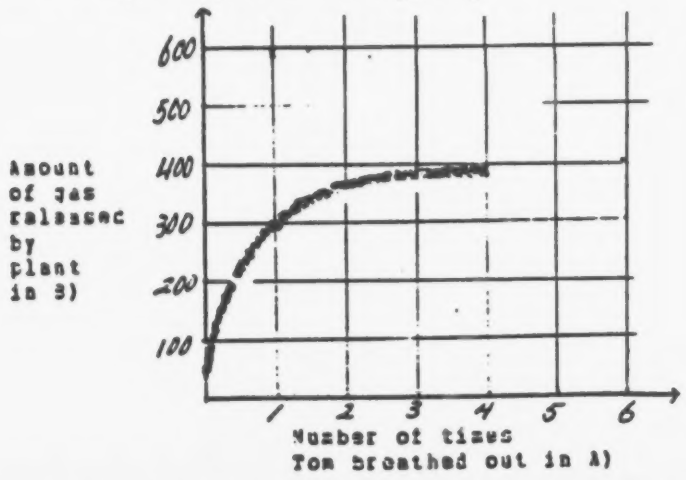
_____

_____





19.Tom wants to investigate the relationship between the amount of the gas released in Procedure B) and time of breathing out in procedure A). So he plotted the amount of the gas released in procedure B) against the time in which he breathed out into the water in procedure A) as below.



Based upon this graph, what result can you predict if Tom breathes out into the water in A) six times?_____

A.The amount of the gas will increase up to 600

B.The amount of the gas will be almost the same as that released in the case of 4 times

C.The amount of the gas will decrease relatively to the case of 4 times.

Explain your answer._____

20.Where does carbon dioxide go during the photosynthetic process?

_____
A.used up by the plant
B.used to make sugar or glucose
C.released to outside the plant
D.I don't know

21.Is each of the following required for the process of photosynthesis? Mark a check ( ).

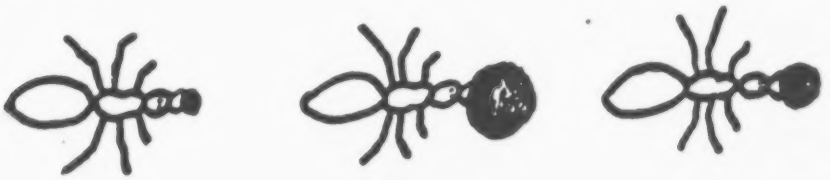
	Yes	No
A. water	( )	( )
B. magnesium	( )	( )
C. chlorophyll	( )	( )
D. carbon dioxide	( )	( )
E. glucose	( )	( )
F. nitrogen	( )	( )
G. protein	( )	( )
H. iron	( )	( )
I. fat	( )	( )
J. enzyme	( )	( )

The End
Thank you very much

Appendix C

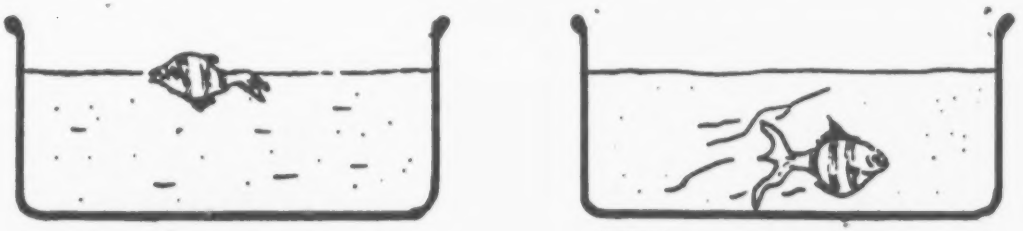
PIAGETIAN LOGICAL REASONING TEST

1.There are three ants. They are carrying different amounts of pieces of bread to their house. Arrange the ants in the order from the ant which is carrying the smallest piece to the ant which is carrying the largest one.



A B C

2.Laura and John each placed a goldfish in fish bowls with equal amount of water. They used the same type and size of fish bowls. They gave the goldfish the same amount of the same food. Laura changed the water in her fish bowl every other day, while John did not change the water in his fish bowl. After two weeks, they found that Laura's goldfish was still alive, but John's goldfish died.



John's Fish Bowl Laura's Fish Bowl

What do you think made this difference?

water change fish bowl feeding time the kind of food

3. There are five picture books. It takes just one hour for Nancy to finish each book. How many hours does it take for Nancy to finish all of the five books?

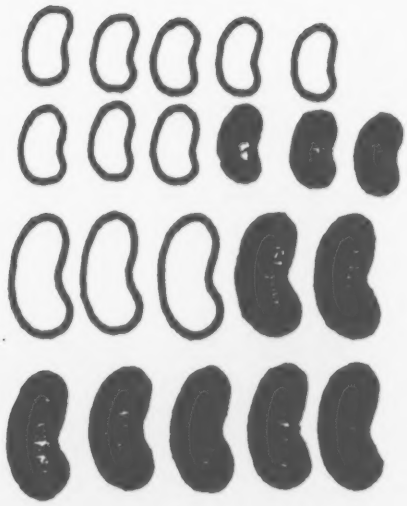
_____ hours.

4. There are 10 large soybeans and 11 small soybeans. Some of them are black and the other are white.

Based upon the picture below, are the large soybeans more likely black than the small soybeans?

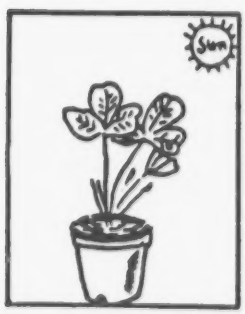
Yes No (Circle one)

Explain your answer.

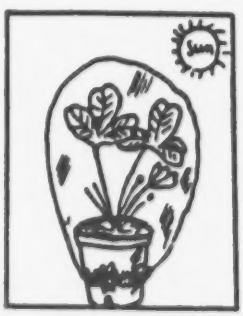


5. Roger wants to find out whether light and air affect plant growth. So he set up all the possible conditions regarding the factors of light and air in the experiment. He put some colver plants near a window or some in a dark room. And he covered some clover plants with vinyl bags, but he didn't some. The pictures below show the conditions which he set up. In order to establish all the possible combinations in terms of light and air, which condition should be set up in the blank below?

Draw the condition, and write the condition below the drawing as in the other conditions' pictures.

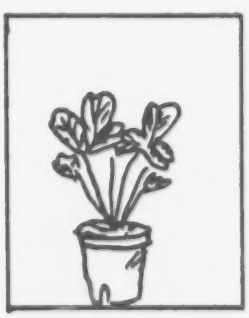


LIGHT
AIR



LIGHT
NO AIR

NO LIGHT
NO AIR



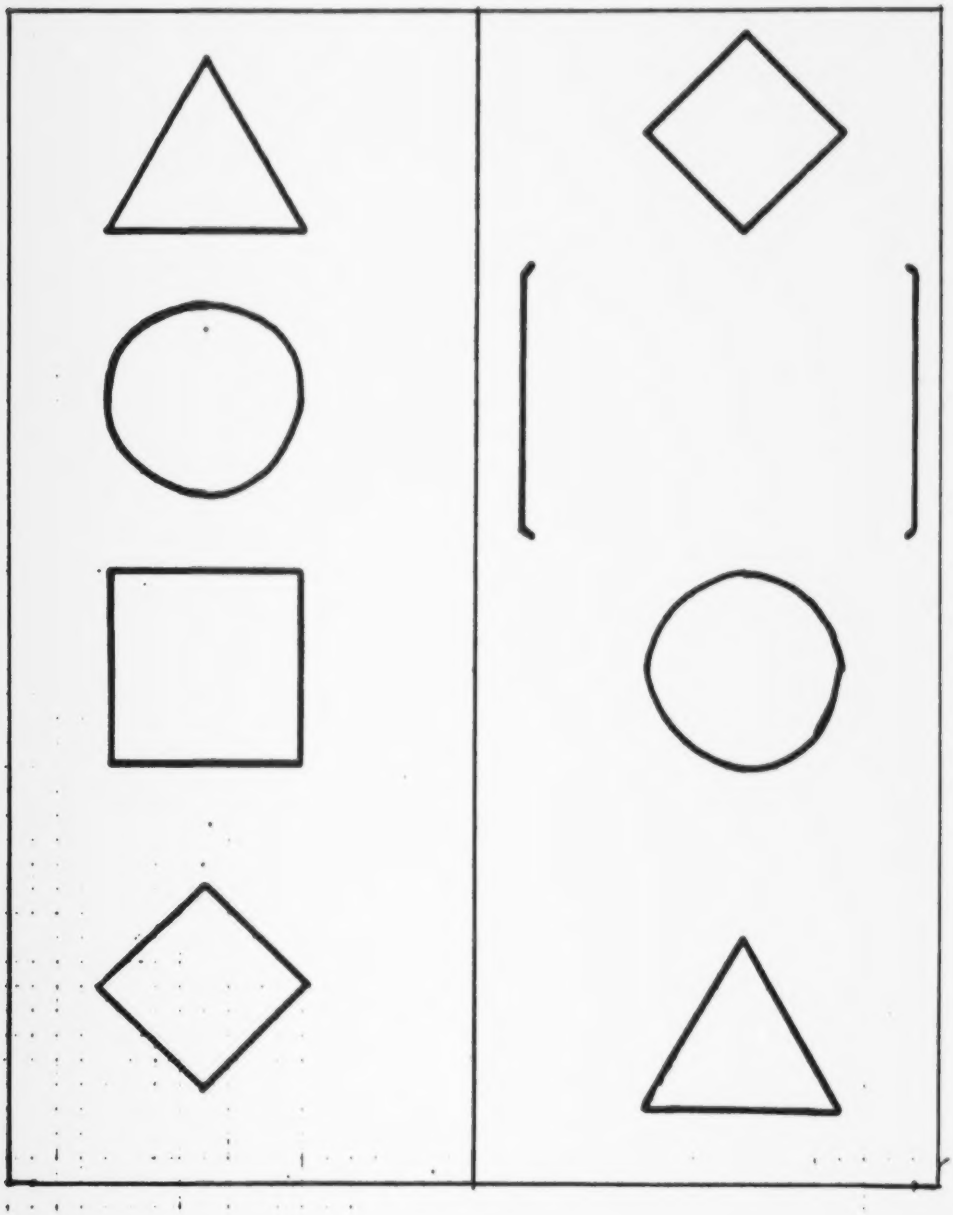
6. Some students are making laboratory partners, consisting of a boy and a girl. There are three boys: ALBERT (A), BOB (B), and CHARLES (C), and three girls: LOUISE (L), MARY (M), and NANCY (N).

One possible pair of laboratory partners is A-L, which means ALBERT and LOUISE.

LIST ALL OTHER POSSIBLE PAIRS OF LABORATORY PARTNERS.
NOTETHE LABORATORY PARTNERS ALWAYS CONSIST OF A BOY AND A GIRL, BUT NOT TWO BOYS NOR TWO GIRLS.

1) A L
2) _____ _____
3) _____ _____
4) _____ _____
5) _____ _____
6) _____ _____
7) _____ _____
8) _____ _____
9) _____ _____
10) _____ _____

7. There are four types of diagrams in each of two columns. However, a diagram in the second column is missing. Which is the most likely diagram when you compare the diagrams in the first column with those in the second column?
Draw the most likely diagram within the bracket [ ].



8.Here are many people.
There are 5 girls, 3 boys, 4 fathers and 2 mothers.

8-1.Look at the picture. Which sentence is true?_____

A.There are more fathers than adults.

B.There are more mothers than fathers.

C.There are more fathers than girls.

D.There are more adults than fathers.

8-2.Look at the picture. Which sentence is true?_____

A.There are more boys than girls.

B.There are more girls than children.

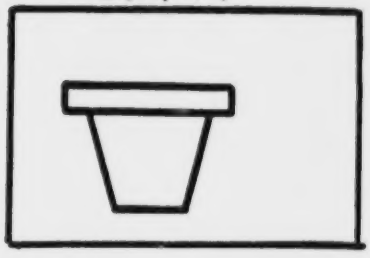
C.There are as many girls as children.

D.There are more children than girls.

Suppose you want to find out whether plant seeds can sprout better in the darkness or in the light. Look at drawings a) and b). There is a pot in the dark room and a pot in the light room.

DARK

LIGHT



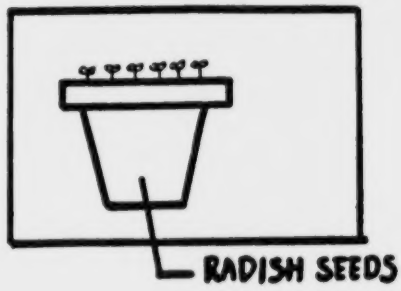
You have radish seeds and bean seeds. And you will add the same amount of water to both pots.

9 .Suppose you put 5 radish seeds to the pot in the dark room. In order to find out whether light or darkness makes any influence on seed sprouting, WHICH seed and HOW MANY of it would you put to the pot in the light room?

WHICH SEED _____ HOW MANY _____

Explain your answer.

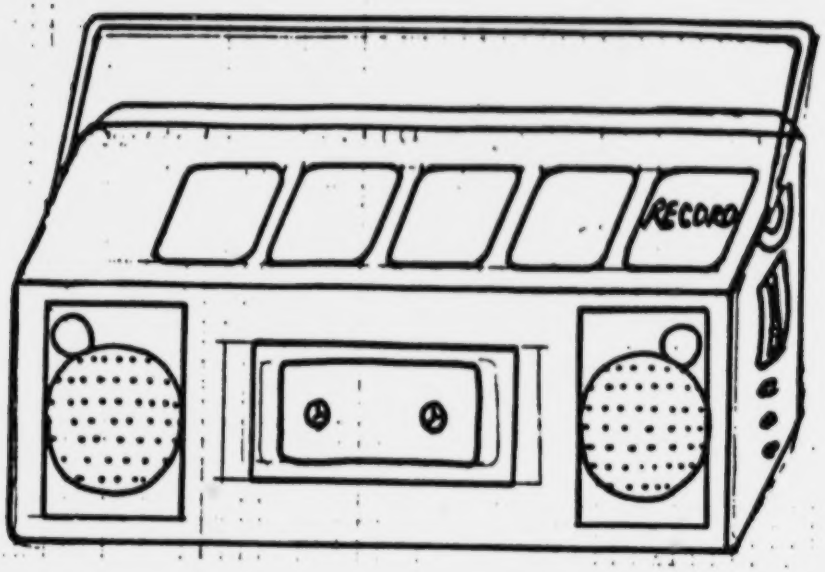
1C.Suppose you put 10 bean seeds to the pot in the dark room and 10 radish seeds to the pot in the light room. After a week you found that more radish seeds sprouted than the bean seeds in the dark room.



Does this result prove seeds sprout better in the light than in the darkness?

Yes No (Circle one)

Explain your answer.



11 .A manufacturer has made a cassette tape recorder and player. The machine has five functions, that is, Play (P), Rewind (R), Stop (S), Eject (E) and Record. So the manufacturer made five keys as depicted in the picture above, with the intention of assigning each key to a function. First of all, he fixed the function of recording to the right side key.

Now how many ways does he have to assign the remaining four functions (P, R, S and E) to the remaining four keys? Write all the possible ways.

	__/	__/	__/	__/		__/	__/	__/	__/		__/	__/	__/	__/
1	--	--	--	--	10	--	--	--	--	19	--	--	--	--
2	--	--	--	--	11	--	--	--	--	20	--	--	--	--
3	--	--	--	--	12	--	--	--	--	21	--	--	--	--
4	--	--	--	--	13	--	--	--	--	22	--	--	--	--
5	--	--	--	--	14	--	--	--	--	23	--	--	--	--
6	--	--	--	--	15	--	--	--	--	24	--	--	--	--
7	--	--	--	--	16	--	--	--	--	25	--	--	--	--
8	--	--	--	--	17	--	--	--	--	26	--	--	--	--
9	--	--	--	--	18	--	--	--	--	27	--	--	--	--

Appendix D

QUESTIONNAIRE

Grade Level_____ Class_____ Number_____

Date of Birth_____ Sex Male Female

(month/day/year)

Below are questions related to your science, home and school. Please answer as honestly and completely as you can to each of the following questions. Circle the correct response(s) (Example:a,b,c,d, or e).

1. What level of education has your father completed? (Circle the highest level only)
   a. elementary school level
   b. middle school level
   c. high school level
   d. college level
   e. graduate level

2. What level of education has your mother completed? (Circle the highest level only)
   a. elementary school level
   b. middle school level
   c. high school level
   d. college level
   e. graduate level

3. What was your final grade in science class of the first semester of this year?
   a. F b. D c. C d. B e. A

4. How did your grades in this science class compare to your other classes this year?
   a. higher than any of my other grades
   b. higher than most of my other grades
   c. about the same as my other grades
   d. lower than most of my other grades
   e. lowest of all my grades

5. What grade did you generally get in previous years' science classes?
   a. F b. D c. C d. B e. A

6. How did your grades in science classes compare to your other classes in previous years?
   a. higher than any of my other grades
   b. higher than most of my other grades
   c. about the same as my other grades
   d. lower than most of my other grades
   e. lowest of all my grades

7. In general, have you enjoyed your science classes before this year?
   a. never
   b. rarely
   c. sometimes
   d. always

8. In general, do you enjoy science class this year?
   a. never
   b. rarely
   c. sometimes
   d. always

9. In general, have you learned much in science class this year?
   a. nothing
   b. very little
   c. an average amount
   d. quite a lot
   e. a great deal

10. Have you ever done any of these science-related activities out of school?
    (You can circle more than one item).
    a. participated in science fair projects
    b. have been a member of a science club
    c. read science magazines or books
    d. read science articles in newspapers
    e. watched science T.V. programs
    f. gardening and/or visited farms

11. List your preferred modes of learning.
    (State 1st, 2nd, and 3rd choices)
    a. listening to lectures_____
    b. doing lab activities_____
    c. working in a group_____
    d. working in outdoor activities_____
    e. reading by myself_____

12. How much of your time in science class this year is doing activities?
    a. less than 10%
    b. about 11-20%
    c. about 21-30%
    d. about 31-40%
    e. more than 41%

13. How much of your time in science class this year do you read a texttbook and answer questions related to the textbook?
    a. less than 1/4 or 25% of our time
    b. about 1/4 or 25% of our time
    c. about 1/2 or 50% of our time
    d. about 3/4 or 75% of our time
    e. really all our time

14. What have you liked most about your science class this year?

    _____

    _____

    _____

    _____

15. What would you like to do in science class that you have not done?

    _____

    _____

    _____

16. Science is my
    a. favorite _____yes _____no
    b. second favorite _____yes _____no
    c. the least favorite _____yes _____no

17. Would you like to take science in the future as an elective subject? _____yes _____no

Thank you very much

Appendix E

VARIABLE LABELS

SEX	Sex of students (male 1, female 0)
F1*	Educational level of fathers--elementary level
F2	--junior-high level of education
F3	--senior-high level of education
F4	--college level of education
F5	--post college level of education
M1	Educational level of mothers--elementary level
M2	--junior-high level of education
M3	--senior-high level of education
M4	--college level of education
M5	--post college level of education
SCT1**	Science grade reported this year(1987)--low for fifth grade, or Failure for eighth grade
SCT2	--average for fifth grade, or Grade D for eighth grade
SCT3	--high for fifth grade, or Grade C for eighth grade
SCT4	--Grade B for eighth grade
SCT5	--Grade A for eighth grade
CMST5	Comparison of science grades with other subject grades this year (1987) --highest of all grades
CMST4	--higher than most other grades
CMST3	--about the same as other grades
CMST2	--lower than most other grades
CMST1	--lowest of all grades
SCL1	Average science grades reported in previous years--low for fifth grade, or Failure for eighth grade
SCL2	--average for fifth grade, or Grade D for eighth grade
SCL3	--high for fifth grade, or Grade C for eighth grade
SCL4	--Grade B for eighth grade
SCL5	--Grade A for eighth grade
CMSL5	Comparison of previous average science grades with previous other subject grades --highest of all grades
CMSL4	--higher than most other grades
CMSL3	--about the same as other grades
CMSL2	--lower than most other grades
FUNL1	Extent to which students liked science

	classes in previous years--never liked
FUNL2	--rarely
FUNL3	--sometimes
FUNL4	--always
FUNT1	Extent to which students liked science classes this year (1978)--never liked
FUNT2	--rarely
FUNT3	--sometimes
FUNT4	--always
EPIS1	Extent to which students thought they learned science this year (1987)--learned nothing
EPIS2	--very little
EPIS3	--an average amount
EPIS4	--quite a lot
EPIS5	--a great deal
ACT1	Participated in science fair projects
ACT2	Have been a member of a science club
ACT3	Read science megazines or books
ACT4	Read science articles in newspapers
ACT5	Watched science T.V. programs
ACT6	Gardening or visited farms
HOW1	Favorite learning style--listening to lectures
HOW2	--doing laboratory activities
HOW3	--working in a group
HOW4	--working in outdoor activities
HOW5	--reading by myself
MF	Science as favorite subject--favorite
SF	--second favorite
LF	--least favorite
FDEC	Interest in taking science courses in the future (interest 1, no interest 0)
L1	Item #1 of PLRT (Correct 1, Wrong 0)
L2	Item #2 of PLRT
L3	Item #3 of PLRT
L4	Item #4 of PLRT
L5	Item #5 of PLRT
L6	Item #6 of PLRT
L7	Item #7 of PLRT
L8A	Item #8A of PLRT
L8B	Item #8B of PLRT
L9	Item #9 of PLRT
L10	Item #10 of PLRT
L11	Item #11 of PLRT
EC	Score of concrete items of PLRT
TS	Score of transitional items of PLRT
FL	Score of formal items of PLRT
CP	Score of combinatorial reasoning items of PLRT
CSV	Score of control of variables items of PLRT
CRLS	Score of correlational reasoning items of PLRT
PTL	Total score of PLRT
B1	Item #1 of PCT (correct 1, wrong 0)
B2	Item #2 of PCT

B3	Item #3 of PCT
B4	Item #4 of PCT
B5	Item #5 of PCT
B6	Item #6 of PCT
B7	Item #7 of PCT
B8	Item #8 of PCT
B9	Item #9 of PCT
B10	Item #10 of PCT
B11	Item #11 of PCT
B12	Item #12 of PCT
B13A	Item #13A of PCT
B13B	Item #13B of PCT
B14A	Item #14A of PCT
B14B	Item #14B of PCT
B15	Item #15 of PCT
B16	Item #16 of PCT
B17	Item #17 of PCT
B18A	Item #18A of PCT
B18B	Item #18B of PCT
B19A	Item #19A of PCT
B19B	Item #19B of PCT
B20	Item #20 of PCT
B21A	Item #21A of PCT
B21B	Item #21B of PCT
B21C	Item #21C of PCT
B21D	Item #21D of PCT
B21E	Item #21E of PCT
B21F	Item #21F of PCT
B21G	Item #21G of PCT
B21H	Item #21H of PCT
B21I	Item #21I of PCT
B21J	Item #21J of PCT
BTL	Total score of PCT

* All the variables were coded dichotomously, that is, 1 for the corresponding category, 0 for the other categories.

** Some variables were not included in correlation matrices of Appendices E and F because of low frequencies for the corresponding categories.

Appendix F

CORRELATION MATRICES FOR ELEMENTARY SCHOOL SAMPLE

See Appendix E for Variable Labels in the Following Correlation Matrices.

	SEX	P3	P4	P5	M3	M4	M5	SCT2	SCT3	CHST4	CHST3
SEX	1.0000	.0628	-.0844	.0467	-.0572	.0010	.0340	-.0553	.0127	.0529	-.0905
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(400)	(200)	(200)	(200)
	P= .	P= .376	P= .234	P= .510	P= .420	P= .989	P= .632	P= .436	P= .859	P= .457	P= .203
P3	.0628	1.0000	-.8783	-.1820	.8583	-.3903	-.1182	.0000	-.0090	-.0590	-.0879
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(400)	(200)	(200)	(400)
	P= .376	P= .	P= .000	P= .010	P= .000	P= .000	P= .095	P=1.000	P= .900	P= .406	P= .501
P4	-.0844	-.8783	1.0000	-.6127	-.0765	.8063	-.2546	-.0206	.0372	.0182	.0470
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(200)	(200)	(200)	(200)
	P= .234	P= .000	P= .	P= .000	P= .280	P= .000	P= .000	P= .772	P= .601	P= .798	P= .509
P5	.0467	-.1820	-.6127	1.0000	-.2209	-.0168	.8716	-.1187	.1436	.0385	-.0022
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(400)	(200)	(200)	(200)
	P= .510	P= .010	P= .000	P= .	P= .002	P= .813	P= .000	P= .106	P= .043	P= .588	P= .976
M3	-.0572	.8583	-.0765	-.2209	1.0000	-.7077	-.2148	.0322	-.0071	-.0185	.0172
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(200)	(200)	(200)	(200)
	P= .420	P= .000	P= .280	P= .002	P= .	P= .000	P= .002	P= .651	P= .920	P= .838	P= .809
M4	.0010	-.3903	.8063	-.0168	-.7077	1.0000	-.3247	-.0450	.0698	.0333	.0076
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(400)	(200)	(200)	(200)
	P= .989	P= .000	P= .000	P= .813	P= .000	P= .	P= .000	P= .527	P= .329	P= .639	P= .915
M5	.0340	-.1182	-.2546	.8716	-.2148	-.3247	1.0000	-.0699	.0888	-.0109	.0044
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(200)	(200)	(200)	(200)
	P= .632	P= .095	P= .000	P= .000	P= .002	P= .000	P= .	P= .325	P= .211	P= .878	P= .950
SCT2	-.0553	.0000	-.0206	-.1187	.0322	-.0450	-.0699	1.0000	-.9149	-.1692	-.0369
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(400)	(200)	(200)	(200)
	P= .436	P=1.000	P= .772	P= .106	P= .651	P= .527	P= .325	P= .	P= .000	P= .017	P= .604
SCT3	.0127	-.0090	.0372	.1436	-.0071	.0698	.0888	-.9149	1.0000	.1633	.1098
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
	P= .859	P= .900	P= .601	P= .043	P= .920	P= .329	P= .211	P= .000	P= .	P= .021	P= .123
CHST4	.0529	-.0590	.0182	.0385	-.0185	.0333	-.0109	-.1692	.1633	1.0000	-.6528
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
	P= .457	P= .406	P= .798	P= .588	P= .838	P= .639	P= .878	P= .017	P= .021	P= .	P= .000
CHST3	-.0905	-.0879	.0470	-.0022	.0172	.0076	.0044	-.0369	.1098	-.6528	1.0000
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
	P= .203	P= .501	P= .509	P= .976	P= .809	P= .915	P= .950	P= .604	P= .123	P= .000	P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CHST2	SCL2	SCL3	CHSL5	CHSL6	CHSL3	FUNL3	FUNL6	FUNT2	FUNT3	FUNT6
SEX	.0786 (200) P= .268	.0691 (201) P= .330	-.0451 (201) P= .525	.2180 (201) P= .002	.0295 (201) P= .678	-.2214 (201) P= .002	-.0729 (200) P= .305	.0808 (200) P= .255	.0214 (198) P= .765	.0380 (198) P= .595	-.0607 (198) P= .250
P3	.1115 (200) P= .116	.0930 (201) P= .189	-.0388 (201) P= .628	.0661 (201) P= .351	.0011 (201) P= .988	-.0017 (201) P= .981	-.0836 (200) P= .239	.1072 (200) P= .131	-.0285 (198) P= .691	.0383 (198) P= .592	.0011 (198) P= .987
P4	-.0729 (200) P= .305	-.0396 (201) P= .577	.0622 (201) P= .380	-.1559 (201) P= .027	.0573 (201) P= .419	.0266 (201) P= .708	.0994 (200) P= .161	-.1060 (200) P= .135	.0290 (198) P= .685	.0047 (198) P= .947	-.0240 (198) P= .737
P5	-.0489 (200) P= .492	-.0628 (201) P= .379	.0725 (201) P= .306	.0993 (201) P= .161	-.0320 (201) P= .652	-.0093 (201) P= .896	-.0867 (200) P= .222	.0903 (200) P= .204	-.0471 (198) P= .510	-.0239 (198) P= .739	.0298 (198) P= .677
B3	-.0443 (200) P= .534	.1223 (201) P= .084	-.0588 (201) P= .480	-.0591 (201) P= .405	.0179 (201) P= .800	.0435 (201) P= .540	.0172 (200) P= .809	-.0808 (200) P= .566	-.0725 (198) P= .310	.1285 (198) P= .071	-.0664 (198) P= .353
B4	-.0487 (200) P= .494	-.1504 (201) P= .033	.1618 (201) P= .022	.0187 (201) P= .836	-.0195 (201) P= .783	-.0098 (201) P= .895	-.0040 (200) P= .955	.0065 (200) P= .927	.0303 (198) P= .672	-.1399 (198) P= .049	.0932 (198) P= .191
B5	-.0283 (200) P= .690	-.0373 (201) P= .599	.0170 (201) P= .810	.1258 (201) P= .076	.0287 (201) P= .686	-.0788 (201) P= .298	-.1207 (200) P= .089	.1402 (200) P= .048	.0260 (198) P= .716	.0035 (198) P= .998	-.0036 (198) P= .960
SCT2	.2212 (200) P= .002	.3669 (200) P= .000	-.4158 (200) P= .000	.0148 (200) P= .840	-.0468 (200) P= .510	-.0151 (200) P= .832	.0367 (199) P= .607	-.1352 (199) P= .057	.0853 (197) P= .528	.2192 (197) P= .002	-.2628 (197) P= .000
SCT3	-.2760 (200) P= .000	-.8098 (200) P= .000	.5479 (200) P= .000	-.0192 (200) P= .788	.0846 (200) P= .234	.0477 (200) P= .502	-.0755 (199) P= .289	.1649 (199) P= .020	-.1893 (197) P= .036	-.1636 (197) P= .022	.2776 (197) P= .000
CHST4	-.1382 (200) P= .051	-.1019 (200) P= .151	.1377 (200) P= .052	.1860 (200) P= .008	.3462 (200) P= .000	-.3764 (200) P= .000	-.1286 (199) P= .070	.1320 (199) P= .063	-.0852 (197) P= .234	-.1051 (197) P= .142	.1978 (197) P= .005
CHST3	-.8109 (200) P= .000	.1151 (200) P= .105	-.0160 (200) P= .823	-.1667 (200) P= .018	-.2887 (200) P= .000	.8135 (200) P= .000	.0435 (199) P= .542	-.0228 (199) P= .750	.0521 (197) P= .467	.0289 (197) P= .728	-.1022 (197) P= .153

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CHST2	SCL2	SCL3	CHSL5	CHSL4	CHSL3	FUNL3	FUNL4	FUNT2	FUNT3	FUNT4
CHST2	1.0000 (200) P= .	-.0283 (200) P= .690	-.0557 (200) P= .433	-.0659 (200) P= .354	.0501 (200) P= .481	-.0758 (200) P= .286	.0801 (199) P= .261	-.1002 (199) P= .159	.0338 (197) P= .637	.0911 (197) P= .203	-.1043 (197) P= .145
SCL2	-.0283 (200) P= .690	1.0000 (201) P= .	-.8137 (201) P= .000	-.0255 (201) P= .719	-.1757 (201) P= .013	.1012 (201) P= .153	.0386 (200) P= .587	-.0552 (200) P= .437	.0678 (198) P= .343	.1600 (198) P= .024	-.1998 (198) P= .005
SCL3	-.0557 (200) P= .433	-.8137 (201) P= .000	1.0000 (201) P= .	.0698 (201) P= .327	.1811 (201) P= .010	-.0813 (201) P= .560	-.0380 (200) P= .593	.1072 (200) P= .131	-.1006 (198) P= .159	-.0993 (198) P= .164	.1574 (198) P= .027
CHSL5	-.0659 (200) P= .354	-.0255 (201) P= .719	.0698 (201) P= .327	1.0000 (201) P= .	-.2253 (201) P= .001	-.4559 (201) P= .000	-.1564 (200) P= .027	.1238 (200) P= .081	-.0861 (198) P= .228	-.0334 (198) P= .640	.1197 (198) P= .093
CHSL4	.0501 (200) P= .481	-.1757 (201) P= .013	.1811 (201) P= .010	-.2253 (201) P= .001	1.0000 (201) P= .	-.6387 (201) P= .000	.0377 (200) P= .597	-.0038 (200) P= .957	-.0968 (198) P= .175	.0696 (198) P= .330	.0284 (198) P= .691
CHSL3	-.0758 (200) P= .286	.1012 (201) P= .153	-.0813 (201) P= .560	-.4559 (201) P= .000	-.6387 (201) P= .000	1.0000 (201) P= .	.0283 (200) P= .690	-.0212 (200) P= .765	.1077 (198) P= .131	-.0232 (198) P= .746	-.1019 (198) P= .153
FUNL3	.0801 (199) P= .261	.0386 (200) P= .587	-.0380 (200) P= .593	-.1564 (200) P= .027	.0377 (200) P= .597	.0283 (200) P= .690	1.0000 (200) P= .	-.9808 (200) P= .000	.0297 (198) P= .678	.2605 (198) P= .000	-.2982 (198) P= .000
FUNL4	-.1002 (199) P= .159	-.0552 (200) P= .437	.1072 (200) P= .131	.1238 (200) P= .081	-.0038 (200) P= .957	-.0212 (200) P= .765	-.9808 (200) P= .000	1.0000 (200) P= .	-.0335 (198) P= .640	-.3073 (198) P= .000	.3865 (198) P= .000
FUNT2	.0338 (197) P= .637	.0678 (198) P= .343	-.1006 (198) P= .159	-.0861 (198) P= .228	-.0968 (198) P= .175	.1077 (198) P= .131	.0297 (198) P= .678	-.0335 (198) P= .640	1.0000 (198) P= .	-.3899 (198) P= .000	-.3097 (198) P= .000
FUNT3	.0911 (197) P= .203	.1600 (198) P= .024	-.0993 (198) P= .164	-.0334 (198) P= .640	.0696 (198) P= .330	-.0232 (198) P= .746	.2605 (198) P= .000	-.3073 (198) P= .000	-.3899 (198) P= .000	1.0000 (198) P= .	-.7037 (198) P= .000
FUNT4	-.1043 (197) P= .145	-.1998 (198) P= .005	.1574 (198) P= .027	.1197 (198) P= .093	.0284 (198) P= .691	-.1019 (198) P= .153	-.2982 (198) P= .000	.3865 (198) P= .000	-.3097 (198) P= .000	-.7037 (198) P= .000	1.0000 (198) P= .

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	EPIS2	EPIS3	EPIS4	EPIS5	ACT1	ACT2	ACT3	ACT4	ACT5	ACT6	MON1
SEX	.1122	-.0462	.1101	-.1611	.0658	.1552	.0258	-.0218	-.0301	-.0278	.0576
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .115	P= .517	P= .122	P= .023	P= .354	P= .028	P= .716	P= .763	P= .671	P= .695	P= .420
P3	-.0852	-.0798	.1031	.0059	-.0862	-.0974	.0216	.0548	.1528	-.0852	.0611
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .232	P= .263	P= .147	P= .934	P= .223	P= .169	P= .761	P= .439	P= .031	P= .528	P= .394
P4	.0365	.0377	-.0504	.0017	.0391	.0211	.0187	-.0696	-.0043	.0886	-.1220
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .609	P= .597	P= .479	P= .981	P= .582	P= .766	P= .792	P= .327	P= .952	P= .529	P= .087
P5	.0083	-.0490	.0128	.0369	.0648	.0396	.0460	.1262	-.0685	.0428	.0111
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .907	P= .491	P= .863	P= .605	P= .361	P= .577	P= .517	P= .074	P= .334	P= .547	P= .877
B3	-.1071	-.0360	.0813	-.0038	-.0090	-.0407	.0597	-.0161	.1253	-.0925	-.0260
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .132	P= .614	P= .253	P= .957	P= .899	P= .566	P= .400	P= .821	P= .076	P= .192	P= .716
B4	.0817	-.0498	-.0176	.0350	.0378	.0876	-.0410	.0230	-.0872	.1166	-.0587
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .251	P= .485	P= .805	P= .624	P= .594	P= .216	P= .563	P= .746	P= .506	P= .099	P= .411
B5	.0120	-.0181	.0011	.0130	.0084	-.0102	.0430	-.0172	-.0963	-.0290	-.0025
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .866	P= .800	P= .988	P= .855	P= .906	P= .886	P= .544	P= .809	P= .174	P= .683	P= .968
SCT2	.0018	.2600	-.0937	-.1829	-.1187	-.0065	-.2173	-.1553	-.0528	-.0567	.1193
	(198)	(198)	(198)	(198)	(200)	(200)	(200)	(200)	(200)	(200)	(197)
	P= .980	P= .000	P= .189	P= .010	P= .106	P= .927	P= .002	P= .028	P= .461	P= .426	P= .095
SCT3	-.0951	-.2869	.1657	.1726	.1258	.0396	.2260	.1995	.0971	.0607	-.1286
	(198)	(198)	(198)	(198)	(200)	(200)	(200)	(200)	(200)	(200)	(197)
	P= .183	P= .000	P= .020	P= .015	P= .077	P= .578	P= .001	P= .005	P= .171	P= .393	P= .074
CRST4	-.0489	-.0381	.1026	-.0647	.0119	.0854	-.0025	.1022	-.0382	.0822	-.0507
	(198)	(198)	(198)	(198)	(200)	(200)	(200)	(200)	(200)	(200)	(197)
	P= .494	P= .594	P= .150	P= .365	P= .867	P= .229	P= .972	P= .150	P= .591	P= .384	P= .479
CRST3	.0187	.0063	-.0314	.0240	.0198	-.1033	.0010	.0831	.1151	-.0870	.0759
	(198)	(198)	(198)	(198)	(200)	(200)	(200)	(200)	(200)	(200)	(197)
	P= .794	P= .930	P= .660	P= .737	P= .785	P= .145	P= .989	P= .584	P= .105	P= .509	P= .289

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	EPIS2	EPIS3	EPIS4	EPIS5	ACT1	ACT2	ACT3	ACT4	ACT5	ACT6	HOM1
CBST2	-.0688	.1220	-.0551	-.0295	-.0677	.0537	.0676	-.0587	-.0927	.0729	.0330
	(198)	(198)	(198)	(198)	(200)	(200)	(200)	(200)	(200)	(200)	(197)
	P= .338	P= .087	P= .440	P= .680	P= .341	P= .450	P= .341	P= .442	P= .192	P= .305	P= .645
SCL2	.0077	.1315	-.0526	-.0908	-.0718	-.0556	-.0406	.0875	.0895	.0070	.0771
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .915	P= .064	P= .461	P= .204	P= .311	P= .433	P= .568	P= .217	P= .485	P= .922	P= .280
SCL3	-.1210	-.1887	.1577	.0834	.0882	.0641	.1486	.0508	.1188	.0254	-.0888
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .089	P= .008	P= .026	P= .242	P= .213	P= .366	P= .035	P= .478	P= .094	P= .720	P= .213
CBSL5	-.0269	-.0433	.0355	.0196	-.0921	.1493	.0437	.0355	-.0638	-.0470	-.0081
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .706	P= .548	P= .619	P= .784	P= .194	P= .034	P= .538	P= .617	P= .371	P= .507	P= .909
CBSL6	-.1279	-.0365	.1233	-.0502	.0328	-.0486	.0769	-.0073	.0966	.0485	.0240
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .072	P= .628	P= .083	P= .482	P= .643	P= .493	P= .278	P= .918	P= .173	P= .530	P= .737
CBSL3	.0636	.0400	-.0831	.0273	.0636	-.0586	-.0890	.0082	.0402	.0263	.0111
	(199)	(199)	(199)	(199)	(201)	(201)	(201)	(201)	(201)	(201)	(198)
	P= .372	P= .575	P= .243	P= .702	P= .370	P= .409	P= .209	P= .908	P= .571	P= .711	P= .877
FBBL3	.0219	.0749	.0802	-.2115	-.0692	-.1256	-.0837	-.2275	-.0948	-.0675	.0654
	(199)	(199)	(199)	(199)	(200)	(200)	(200)	(200)	(200)	(200)	(197)
	P= .759	P= .293	P= .260	P= .003	P= .330	P= .076	P= .539	P= .001	P= .182	P= .342	P= .361
FBBL6	-.0586	-.1088	-.0570	.2401	.0837	.1287	.1096	.2533	.1572	.0732	-.1026
	(199)	(199)	(199)	(199)	(200)	(200)	(200)	(200)	(200)	(200)	(197)
	P= .448	P= .126	P= .424	P= .001	P= .239	P= .069	P= .123	P= .000	P= .026	P= .303	P= .152
FBBT2	.0997	.2712	-.1528	-.1795	-.0955	-.1171	-.2252	-.1783	-.1717	-.0584	.0227
	(197)	(197)	(197)	(197)	(198)	(198)	(198)	(198)	(198)	(198)	(195)
	P= .163	P= .000	P= .033	P= .012	P= .181	P= .100	P= .001	P= .012	P= .016	P= .413	P= .752
FBBT3	-.1260	.1488	.0184	-.1294	-.0784	-.1178	.0649	-.0577	-.0237	-.0087	.0728
	(197)	(197)	(197)	(197)	(198)	(198)	(198)	(198)	(198)	(198)	(195)
	P= .078	P= .037	P= .797	P= .070	P= .272	P= .098	P= .364	P= .419	P= .740	P= .947	P= .312
FBBT4	-.1238	-.3483	.1497	.2908	.1642	.2333	.0957	.2047	.1348	.0674	-.1182
	(197)	(197)	(197)	(197)	(198)	(198)	(198)	(198)	(198)	(198)	(195)
	P= .084	P= .000	P= .036	P= .000	P= .021	P= .001	P= .180	P= .004	P= .059	P= .345	P= .112

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	EPIS2	EPIS3	EPIS4	EPIS5	ACT1	ACT2	ACT3	ACT4	ACT5	ACT6	HOH1
EPIS2	1.0000 (199) P= .	-.1368 (199) P= .054	-.2831 (199) P= .001	-.1007 (199) P= .157	-.0529 (199) P= .458	-.0483 (199) P= .498	-.0992 (199) P= .163	-.1073 (199) P= .132	-.0718 (199) P= .316	-.0365 (199) P= .609	.1402 (196) P= .050
EPIS3	-.1368 (199) P= .054	1.0000 (199) P= .	-.6286 (199) P= .000	-.2604 (199) P= .000	-.1368 (199) P= .054	-.1309 (199) P= .065	-.1792 (199) P= .011	-.1765 (199) P= .013	-.2325 (199) P= .001	-.0377 (199) P= .597	.0618 (196) P= .390
EPIS4	-.2831 (199) P= .001	-.6286 (199) P= .000	1.0000 (199) P= .	-.4626 (199) P= .000	.1255 (199) P= .077	-.0522 (199) P= .464	.1265 (199) P= .075	.0014 (199) P= .984	.1251 (199) P= .078	-.0327 (199) P= .647	.0185 (196) P= .797
EPIS5	-.1007 (199) P= .157	-.2604 (199) P= .000	-.4626 (199) P= .000	1.0000 (199) P= .	.0245 (199) P= .731	.2563 (199) P= .000	.1014 (199) P= .154	.2729 (199) P= .000	.1506 (199) P= .034	.1112 (199) P= .118	-.1841 (196) P= .010
ACT1	-.0529 (199) P= .458	-.1368 (199) P= .054	.1255 (199) P= .077	.0245 (199) P= .731	1.0000 (201) P= .	.1318 (201) P= .062	.0680 (201) P= .337	-.0584 (201) P= .410	.0255 (201) P= .720	-.0840 (201) P= .236	-.1142 (198) P= .109
ACT2	-.0483 (199) P= .498	-.1309 (199) P= .065	-.0522 (199) P= .464	.2563 (199) P= .000	.1318 (201) P= .062	1.0000 (201) P= .	.0330 (201) P= .642	.0524 (201) P= .460	.0194 (201) P= .784	.0639 (201) P= .367	-.0605 (198) P= .397
ACT3	-.0992 (199) P= .163	-.1792 (199) P= .011	.1265 (199) P= .075	.1014 (199) P= .154	.0680 (201) P= .337	.0330 (201) P= .642	1.0000 (201) P= .	.3044 (201) P= .000	.3023 (201) P= .000	.1234 (201) P= .081	-.0609 (198) P= .394
ACT4	-.1073 (199) P= .132	-.1765 (199) P= .013	.0014 (199) P= .984	.2729 (199) P= .000	-.0584 (201) P= .410	.0524 (201) P= .460	.3044 (201) P= .000	1.0000 (201) P= .	.2598 (201) P= .000	.1822 (201) P= .048	-.0960 (198) P= .179
ACT5	-.0718 (199) P= .316	-.2325 (199) P= .001	.1251 (199) P= .078	.1506 (199) P= .034	.0255 (201) P= .720	.0194 (201) P= .784	.3023 (201) P= .000	.2598 (201) P= .000	1.0000 (201) P= .	.1255 (201) P= .076	.0743 (198) P= .298
ACT6	-.0365 (199) P= .609	-.0377 (199) P= .597	-.0327 (199) P= .647	.1112 (199) P= .118	-.0840 (201) P= .236	.0639 (201) P= .367	.1234 (201) P= .081	.1822 (201) P= .048	.1255 (201) P= .076	1.0000 (201) P= .	.0687 (198) P= .336
HOH1	.1402 (196) P= .050	.0618 (196) P= .390	.0185 (196) P= .797	-.1841 (196) P= .010	-.1142 (198) P= .109	-.0605 (198) P= .397	-.0609 (198) P= .394	-.0960 (198) P= .179	.0743 (198) P= .298	.0687 (198) P= .336	1.0000 (198) P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	HOW2	HOW3	HOW4	HOW5	RF	SF	FDEC	L1	L2	L3	L4
SEX	-.0912	-.0682	.0144	.0788	.2171	-.0826	.3152	-.0715	.0530	.1149	.0190
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .202	P= .370	P= .841	P= .271	P= .002	P= .252	P= .000	P= .313	P= .455	P= .104	P= .789
P3	-.1414	.0599	-.0086	.0566	.1066	-.0849	-.0238	-.1461	.0062	-.0366	-.0062
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .047	P= .403	P= .904	P= .429	P= .139	P= .239	P= .743	P= .039	P= .930	P= .606	P= .930
P4	.1400	.0640	.0159	-.1092	-.0510	.0158	-.0097	.0840	.0915	.0713	.0556
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .050	P= .372	P= .824	P= .127	P= .480	P= .827	P= .892	P= .236	P= .196	P= .315	P= .433
P5	.0163	-.1490	-.0161	.1587	-.0003	.0359	.0577	.1270	.0098	-.0860	-.0096
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .820	P= .037	P= .822	P= .030	P= .996	P= .619	P= .419	P= .072	P= .891	P= .225	P= .891
B3	-.0375	.1238	.0757	-.1288	-.0113	.0558	-.0893	.0060	.0582	-.0965	-.0582
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .601	P= .083	P= .289	P= .082	P= .875	P= .443	P= .210	P= .932	P= .445	P= .173	P= .445
B4	.0778	-.0823	.0218	.0338	.0088	-.0562	.0609	.0298	.0285	.1015	.1146
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .277	P= .250	P= .760	P= .637	P= .903	P= .437	P= .393	P= .679	P= .688	P= .152	P= .105
B5	.0085	-.0688	-.0656	.1876	.0476	-.0257	.0952	.0825	.0327	-.0618	-.0327
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .906	P= .337	P= .358	P= .038	P= .510	P= .722	P= .181	P= .248	P= .645	P= .384	P= .645
SCT2	-.0995	.0840	-.1831	-.0156	-.1700	.1528	-.0719	-.0316	-.1751	-.0801	-.1076
	(196)	(196)	(197)	(196)	(194)	(194)	(198)	(200)	(200)	(200)	(200)
	P= .165	P= .242	P= .045	P= .828	P= .018	P= .033	P= .314	P= .657	P= .013	P= .260	P= .129
SCT3	.1362	-.1120	.1737	-.0133	.1950	-.1181	.1269	.0120	.2330	.0687	.1240
	(196)	(196)	(197)	(196)	(194)	(194)	(198)	(200)	(200)	(200)	(200)
	P= .057	P= .118	P= .015	P= .858	P= .006	P= .113	P= .075	P= .866	P= .001	P= .363	P= .080
CBST4	.0062	-.0760	.0228	.1146	.1439	-.1048	.1178	.0088	.0902	.0750	-.0895
	(196)	(196)	(197)	(196)	(194)	(194)	(198)	(200)	(200)	(200)	(200)
	P= .931	P= .289	P= .750	P= .110	P= .045	P= .146	P= .098	P= .902	P= .204	P= .291	P= .487
CBST3	-.0385	.0243	-.0062	-.0887	-.1636	.1509	-.0596	-.0880	.0218	-.0873	.1052
	(196)	(196)	(197)	(196)	(194)	(194)	(198)	(200)	(200)	(200)	(200)
	P= .592	P= .735	P= .931	P= .238	P= .023	P= .036	P= .408	P= .500	P= .759	P= .506	P= .138

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	BOB2	BOB3	BOB4	BOB5	HF	SF	FDEC	L1	L2	L3	L4
CBST2	-.0066	-.0269	-.0412	.0608	-.0211	-.0154	-.1172	-.0031	-.1168	-.0708	-.0899
	(196)	(196)	(197)	(196)	(194)	(194)	(198)	(200)	(200)	(200)	(200)
	P= .927	P= .709	P= .565	P= .397	P= .770	P= .831	P= .100	P= .965	P= .099	P= .319	P= .206
SCL2	-.1321	.1077	-.0828	.0080	-.0788	.1130	-.0819	-.0592	.0327	-.0618	-.0327
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .068	P= .132	P= .246	P= .911	P= .303	P= .117	P= .250	P= .404	P= .645	P= .384	P= .645
SCL3	.1816	-.1668	.0979	.0470	.1158	-.1023	.0872	.0795	.0960	.0336	.0639
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .047	P= .019	P= .170	P= .512	P= .109	P= .156	P= .220	P= .262	P= .175	P= .636	P= .368
CBSL5	.0127	-.0398	-.0189	.0578	.1759	-.0672	.1157	.0878	.0190	.0683	-.1223
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .859	P= .579	P= .835	P= .420	P= .014	P= .352	P= .104	P= .504	P= .789	P= .365	P= .084
CBSL4	-.0248	-.0316	-.0336	.1075	.1701	-.0637	.1307	.0050	.0888	-.0608	.0816
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .730	P= .659	P= .639	P= .133	P= .018	P= .378	P= .066	P= .944	P= .531	P= .394	P= .251
CBSL3	.0125	.0008	.0297	-.0922	-.2479	.1830	-.1757	-.0282	-.0160	-.0122	.0520
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .862	P= .991	P= .678	P= .197	P= .000	P= .047	P= .013	P= .691	P= .822	P= .864	P= .466
FBBL3	-.0905	.0421	-.0252	.0198	-.2288	.1820	-.2098	.0877	.0126	-.0805	-.0487
	(196)	(196)	(197)	(196)	(193)	(193)	(198)	(200)	(200)	(200)	(200)
	P= .207	P= .558	P= .725	P= .787	P= .001	P= .011	P= .003	P= .217	P= .859	P= .257	P= .494
FBBL4	.0932	-.0397	.0652	-.0248	.2326	-.1999	.2805	-.1088	.0418	.0718	.0676
	(196)	(196)	(197)	(196)	(193)	(193)	(198)	(200)	(200)	(200)	(200)
	P= .194	P= .581	P= .363	P= .730	P= .001	P= .005	P= .001	P= .141	P= .560	P= .315	P= .344
FBBT2	-.0216	.0810	-.0013	-.0990	-.0791	-.1476	-.0856	.0521	.0760	.0667	-.0180
	(194)	(194)	(195)	(194)	(191)	(191)	(196)	(198)	(198)	(198)	(198)
	P= .765	P= .262	P= .986	P= .170	P= .277	P= .042	P= .525	P= .466	P= .287	P= .351	P= .801
FBBT3	-.1058	-.0090	-.1062	.1536	-.2125	.3127	-.1358	-.0385	-.0367	-.1065	-.1305
	(194)	(194)	(195)	(194)	(191)	(191)	(196)	(198)	(198)	(198)	(198)
	P= .142	P= .901	P= .140	P= .032	P= .003	P= .000	P= .058	P= .609	P= .608	P= .135	P= .067
FBBT4	.1231	-.0682	.1338	-.0625	.3108	-.2325	.1721	.0281	.0036	.0532	.1261
	(194)	(194)	(195)	(194)	(191)	(191)	(196)	(198)	(198)	(198)	(198)
	P= .087	P= .345	P= .062	P= .387	P= .000	P= .001	P= .016	P= .694	P= .960	P= .456	P= .077

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	ROW2	ROW3	ROW4	ROW5	RF	SF	FDEC	L1	L2	L3	L4
EPIS2	-.0738	.0741	-.0956	-.0760	-.1087	-.0114	-.0320	-.0384	-.0943	.0329	-.0703
	(195)	(195)	(196)	(195)	(192)	(192)	(197)	(199)	(199)	(199)	(199)
	P= .305	P= .304	P= .183	P= .291	P= .134	P= .875	P= .655	P= .591	P= .185	P= .644	P= .324
EPIS3	-.0641	-.0287	-.0670	.0598	-.1065	.0692	-.0829	.0065	-.0228	-.0778	-.0999
	(195)	(195)	(196)	(195)	(192)	(192)	(197)	(199)	(199)	(199)	(199)
	P= .373	P= .731	P= .350	P= .406	P= .142	P= .340	P= .247	P= .927	P= .749	P= .275	P= .160
EPIS4	.0603	.0027	-.0083	-.0503	-.0458	.0491	.0296	.0180	.0709	.1514	.1091
	(195)	(195)	(196)	(195)	(192)	(192)	(197)	(199)	(199)	(199)	(199)
	P= .403	P= .970	P= .952	P= .485	P= .532	P= .499	P= .680	P= .848	P= .319	P= .033	P= .125
EPIS5	.0389	-.0189	.1481	.0430	.2488	-.1817	.0780	-.0040	-.0130	-.1322	.0130
	(195)	(195)	(196)	(195)	(192)	(192)	(197)	(199)	(199)	(199)	(199)
	P= .590	P= .793	P= .048	P= .551	P= .001	P= .050	P= .276	P= .955	P= .855	P= .063	P= .855
ACT1	-.0173	.0039	.1979	-.0756	.0473	-.0730	.0591	-.0329	.0696	.0365	-.0696
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .810	P= .957	P= .005	P= .291	P= .513	P= .311	P= .407	P= .643	P= .327	P= .607	P= .327
ACT2	-.0218	-.0811	.2226	-.1068	.1358	-.0662	.1819	.1228	.0953	.0746	.0845
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .761	P= .257	P= .002	P= .135	P= .060	P= .359	P= .046	P= .082	P= .178	P= .293	P= .530
ACT3	.0199	-.1000	.0949	.0616	.0823	.0166	.1030	.2470	.0941	-.0858	-.0083
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .781	P= .162	P= .184	P= .390	P= .258	P= .818	P= .148	P= .000	P= .188	P= .226	P= .907
ACT4	.1580	-.0279	-.0819	.0596	.0767	.0608	.0667	.0347	.0346	-.0232	.0729
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .027	P= .697	P= .252	P= .406	P= .288	P= .400	P= .349	P= .625	P= .626	P= .743	P= .304
ACT5	.1603	-.1072	-.0539	-.1008	.0718	.0809	.0355	.1019	.0746	-.1180	.1128
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .024	P= .134	P= .451	P= .159	P= .323	P= .571	P= .619	P= .150	P= .292	P= .095	P= .112
ACT6	-.1081	-.0353	-.0178	.0525	-.0466	.0209	.0007	.1633	-.0211	-.0731	.1317
	(197)	(197)	(198)	(197)	(194)	(194)	(199)	(201)	(201)	(201)	(201)
	P= .131	P= .623	P= .804	P= .464	P= .519	P= .773	P= .992	P= .021	P= .766	P= .303	P= .062
ROW1	-.2227	-.2966	-.4770	-.1291	-.0715	.2166	.1343	-.0285	-.0258	-.0083	.0519
	(197)	(197)	(198)	(197)	(191)	(191)	(196)	(198)	(198)	(198)	(198)
	P= .002	P= .000	P= .000	P= .071	P= .326	P= .003	P= .061	P= .690	P= .722	P= .908	P= .468

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	BOR2	BOR3	BOR4	BOR5	BF	SF	FDEC	L1	L2	L3	L4
BOR2	1.0000 (197) P= .	-.1367 (197) P= .055	-.2125 (197) P= .003	-.3432 (197) P= .000	.0606 (190) P= .406	-.0583 (190) P= .424	.0053 (195) P= .941	.0175 (197) P= .807	-.0113 (197) P= .875	.1040 (197) P= .146	.0574 (197) P= .423
BOR3	-.1367 (197) P= .055	1.0000 (197) P= .	-.2186 (197) P= .002	-.3538 (197) P= .000	-.1575 (190) P= .030	.0734 (190) P= .314	-.0820 (195) P= .254	.0304 (197) P= .672	-.0911 (197) P= .203	-.0189 (197) P= .792	.0359 (197) P= .616
BOR4	-.2125 (197) P= .003	-.2186 (197) P= .002	1.0000 (198) P= .	-.0617 (197) P= .389	.1524 (191) P= .035	-.2380 (191) P= .001	-.0403 (196) P= .574	-.0458 (198) P= .521	.0938 (198) P= .189	-.0593 (198) P= .406	-.0705 (198) P= .324
BOR5	-.3432 (197) P= .000	-.3538 (197) P= .000	-.0617 (197) P= .389	1.0000 (197) P= .	.0759 (190) P= .298	-.0596 (190) P= .414	-.0638 (195) P= .375	-.0311 (197) P= .664	.0830 (197) P= .246	-.0020 (197) P= .977	-.0821 (197) P= .252
BF	.0606 (190) P= .406	-.1575 (190) P= .030	.1524 (191) P= .035	.0759 (190) P= .298	1.0000 (194) P= .	-.6705 (193) P= .000	.3281 (194) P= .000	-.1248 (194) P= .083	.0666 (194) P= .356	.0065 (194) P= .928	.1158 (194) P= .109
SF	-.0583 (190) P= .424	.0734 (190) P= .314	-.2380 (191) P= .001	-.0596 (190) P= .414	-.6705 (193) P= .000	1.0000 (194) P= .	-.0533 (194) P= .461	.0804 (194) P= .265	-.0632 (194) P= .382	.0169 (194) P= .815	-.0705 (194) P= .329
FDEC	.0053 (195) P= .941	-.0820 (195) P= .254	-.0403 (196) P= .574	-.0638 (195) P= .375	.3281 (194) P= .000	-.0533 (194) P= .461	1.0000 (199) P= .	-.0227 (199) P= .750	.2086 (199) P= .003	.1210 (199) P= .089	.1549 (199) P= .029
L1	.0175 (197) P= .807	.0304 (197) P= .672	-.0458 (198) P= .521	-.0311 (197) P= .664	-.1248 (194) P= .083	.0804 (194) P= .265	-.0227 (199) P= .750	1.0000 (201) P= .	-.0072 (201) P= .919	.0879 (201) P= .215	-.0655 (201) P= .356
L2	-.0113 (197) P= .875	-.0911 (197) P= .203	.0938 (198) P= .189	.0830 (197) P= .246	.0666 (194) P= .356	-.0632 (194) P= .382	.2086 (199) P= .003	-.0072 (201) P= .919	1.0000 (201) P= .	-.0485 (201) P= .494	.0924 (201) P= .192
L3	.1040 (197) P= .146	-.0189 (197) P= .792	-.0593 (198) P= .406	-.0020 (197) P= .977	.0065 (194) P= .928	.0169 (194) P= .815	.1210 (199) P= .089	.0879 (201) P= .215	-.0485 (201) P= .494	1.0000 (201) P= .	-.0485 (201) P= .494
L4	.0574 (197) P= .423	.0359 (197) P= .616	-.0705 (198) P= .324	-.0821 (197) P= .252	.1158 (194) P= .109	-.0705 (194) P= .329	.1549 (199) P= .029	-.0655 (201) P= .356	.0924 (201) P= .192	.0485 (201) P= .494	1.0000 (201) P= .

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	L5	L6	L7	L8A	L8B	L9	L10	L11	ZC	TS	FL
SEX	-.0921	-.0488	-.0781	-.0002	.0269	-.0013	-.0115	.0616	-.0509	-.0832	.0287
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .194	P= .495	P= .271	P= .998	P= .705	P= .985	P= .871	P= .385	P= .473	P= .542	P= .727
P3	-.1066	-.1229	-.1338	-.1487	-.1693	-.1263	-.0923	-.1401	-.1876	-.2109	-.1488
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .132	P= .082	P= .059	P= .040	P= .016	P= .074	P= .193	P= .047	P= .008	P= .003	P= .035
P4	.1230	.0833	.2027	.2188	.0810	.1969	.1008	.1102	.1963	.1770	.1889
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .082	P= .542	P= .004	P= .002	P= .253	P= .005	P= .156	P= .119	P= .005	P= .012	P= .007
P5	.0090	.1268	-.0085	-.0129	.1017	-.0519	-.0211	.0329	.0830	.0829	-.0227
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .899	P= .073	P= .950	P= .856	P= .151	P= .464	P= .767	P= .642	P= .545	P= .242	P= .749
H3	-.0529	-.0838	-.0280	-.0134	-.0993	-.0375	-.1529	-.1317	-.0622	-.0999	-.1382
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .456	P= .239	P= .693	P= .850	P= .161	P= .598	P= .030	P= .062	P= .380	P= .158	P= .057
H4	.0870	.0367	.1015	.1421	.1105	.1028	.1807	.1287	.1274	.1152	.1769
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .921	P= .605	P= .152	P= .044	P= .118	P= .146	P= .046	P= .078	P= .072	P= .103	P= .012
H5	.1478	.1282	.0501	-.0962	.0006	.0177	.0857	.0758	.0893	.0691	.0839
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .036	P= .070	P= .480	P= .176	P= .993	P= .803	P= .519	P= .285	P= .487	P= .330	P= .536
SCT2	-.1382	-.3021	.0718	-.2855	-.3007	-.2308	-.1862	-.1095	-.0395	-.3608	-.2386
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
	P= .051	P= .000	P= .315	P= .000	P= .000	P= .001	P= .039	P= .123	P= .578	P= .000	P= .001
SCT3	.1818	.3079	.0068	.2685	.3207	.2987	.1653	.1078	.0526	.3930	.2766
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
	P= .010	P= .000	P= .928	P= .000	P= .000	P= .000	P= .019	P= .130	P= .459	P= .000	P= .000
CBST4	.0033	.0803	.0669	.1079	.1762	.2065	.0272	-.1227	.0658	.1330	.0508
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
	P= .963	P= .259	P= .346	P= .128	P= .013	P= .003	P= .702	P= .084	P= .358	P= .060	P= .478
CBST3	.0997	.0994	.0483	.0599	.0461	-.0203	.0377	.0701	-.0267	.1125	.0586
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
	P= .160	P= .161	P= .497	P= .400	P= .517	P= .775	P= .596	P= .328	P= .707	P= .113	P= .410

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	L5	L6	L7	L8A	L8B	L9	L10	L11	EC	TS	FL
CBST2	-.0502 (200) P= .480	-.1248 (200) P= .079	-.0895 (200) P= .207	-.0885 (200) P= .213	-.1855 (200) P= .009	-.1285 (200) P= .070	-.1089 (200) P= .125	.0498 (200) P= .488	-.0816 (200) P= .251	-.1634 (200) P= .021	-.1052 (200) P= .138
BCL2	-.2218 (201) P= .002	-.0892 (201) P= .208	.0501 (201) P= .480	-.0962 (201) P= .174	-.1163 (201) P= .101	-.2266 (201) P= .001	-.1155 (201) P= .103	-.1890 (201) P= .035	-.0528 (201) P= .460	-.1926 (201) P= .006	-.2171 (201) P= .002
BCL3	.2097 (201) P= .003	.1713 (201) P= .015	.1288 (201) P= .068	.1648 (201) P= .019	.1903 (201) P= .007	.2884 (201) P= .000	.1819 (201) P= .044	.1448 (201) P= .040	.1365 (201) P= .053	.2706 (201) P= .000	.2635 (201) P= .000
CBSL5	-.1016 (201) P= .151	-.2081 (201) P= .004	-.1203 (201) P= .089	-.1095 (201) P= .122	-.1346 (201) P= .057	-.0796 (201) P= .261	-.1038 (201) P= .142	-.1911 (201) P= .007	.0027 (201) P= .970	-.2029 (201) P= .004	-.1812 (201) P= .010
CBSL8	-.0743 (201) P= .295	-.0623 (201) P= .380	.0895 (201) P= .207	.0905 (201) P= .201	.0618 (201) P= .384	.0628 (201) P= .376	.0857 (201) P= .520	.0351 (201) P= .621	.0086 (201) P= .903	-.0058 (201) P= .935	.0823 (201) P= .246
CBSL3	.1773 (201) P= .012	.2511 (201) P= .000	.1810 (201) P= .010	.0064 (201) P= .928	.0555 (201) P= .434	.1086 (201) P= .125	.0775 (201) P= .274	.0828 (201) P= .243	.0693 (201) P= .328	.1914 (201) P= .006	.1257 (201) P= .075
FBBL3	-.0394 (200) P= .580	-.1430 (200) P= .043	.0483 (200) P= .497	-.0439 (200) P= .537	-.0619 (200) P= .384	-.1671 (200) P= .018	-.1608 (200) P= .023	-.0608 (200) P= .392	.0615 (200) P= .387	-.1069 (200) P= .132	-.1726 (200) P= .015
FBBL8	.0399 (200) P= .575	.1822 (200) P= .010	-.0584 (200) P= .411	.0265 (200) P= .709	.1157 (200) P= .103	.1721 (200) P= .015	.1846 (200) P= .009	.0903 (200) P= .204	-.0814 (200) P= .252	.1388 (200) P= .057	.1994 (200) P= .005
FBBT2	.0358 (198) P= .616	.1053 (198) P= .140	.0667 (198) P= .351	.1177 (198) P= .099	.0018 (198) P= .980	.0468 (198) P= .516	.0727 (198) P= .309	.1380 (198) P= .052	.0920 (198) P= .197	.0965 (198) P= .176	.0967 (198) P= .175
FBBT3	-.0956 (198) P= .180	-.1511 (198) P= .034	.0225 (198) P= .753	-.1501 (198) P= .035	-.1393 (198) P= .050	-.2898 (198) P= .000	-.2149 (198) P= .002	-.1550 (198) P= .029	-.0489 (198) P= .494	-.1963 (198) P= .006	-.2986 (198) P= .000
FBBT8	.0662 (198) P= .358	.0836 (198) P= .242	-.0810 (198) P= .256	.0576 (198) P= .420	.1385 (198) P= .059	.2606 (198) P= .000	.1891 (198) P= .008	.0571 (198) P= .424	-.0038 (198) P= .962	.1286 (198) P= .080	.2519 (198) P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	L5	L6	L7	L8A	L8B	L9	L10	L11	AC	TS	FL
EPIS2	-.0179	-.0662	.0369	.0509	-.0665	-.1073	-.0852	.0083	.0008	-.0379	-.0975
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)
	P= .802	P= .353	P= .605	P= .475	P= .350	P= .132	P= .232	P= .907	P= .996	P= .595	P= .171
EPIS3	-.0123	-.0282	.0228	-.0579	-.0229	-.1536	-.0847	-.1078	-.0279	-.0870	-.1607
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)
	P= .863	P= .692	P= .753	P= .417	P= .748	P= .030	P= .531	P= .129	P= .695	P= .509	P= .023
EPIS4	-.0718	-.0631	.0410	-.0298	-.0115	.1023	-.0205	-.0398	.0811	-.0620	.0598
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)
	P= .316	P= .376	P= .565	P= .680	P= .872	P= .151	P= .774	P= .581	P= .255	P= .388	P= .405
EPIS5	.1223	.1588	-.1045	.0789	.0826	.1088	.1319	.1776	-.0770	.1631	.1694
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)
	P= .085	P= .025	P= .142	P= .268	P= .246	P= .127	P= .063	P= .012	P= .280	P= .021	P= .017
ACT1	-.1133	-.0175	.0365	.0515	-.0109	.1250	-.0137	-.0496	.0063	-.0159	.0193
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .109	P= .805	P= .607	P= .468	P= .878	P= .077	P= .847	P= .486	P= .929	P= .822	P= .785
ACT2	-.0826	.0020	.0746	.0543	.0877	.0004	.1081	-.0210	.1492	.0311	.0395
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .244	P= .977	P= .293	P= .444	P= .216	P= .996	P= .127	P= .767	P= .034	P= .661	P= .578
ACT3	.0000	.0659	-.0092	.1128	.0656	-.0064	-.0231	.0395	.1419	.0893	.0023
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P=1.000	P= .352	P= .897	P= .111	P= .355	P= .928	P= .745	P= .577	P= .044	P= .208	P= .974
ACT4	.0352	.1968	-.0232	.0687	.1852	.1217	.1335	.0897	.0175	.1722	.1589
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .620	P= .005	P= .743	P= .333	P= .040	P= .085	P= .059	P= .206	P= .805	P= .014	P= .024
ACT5	-.0078	.0696	.0156	.0102	-.0418	.2177	.0153	-.0518	.0373	.0128	.1287
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .917	P= .326	P= .826	P= .885	P= .560	P= .002	P= .829	P= .465	P= .599	P= .857	P= .070
ACT6	.0580	.0128	.1245	.1353	.0955	.0600	.0293	.0797	.1593	.1176	.1068
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)
	P= .413	P= .856	P= .078	P= .055	P= .177	P= .397	P= .680	P= .261	P= .024	P= .096	P= .131
BOB1	.0777	-.1055	.0849	-.1141	-.0563	.0055	.0530	-.0201	-.0243	-.0836	.0287
	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)
	P= .277	P= .139	P= .530	P= .110	P= .430	P= .939	P= .459	P= .778	P= .736	P= .243	P= .709

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	L5	L6	L7	L8A	L8B	L9	L10	L11	EC	TS	FL
82	.1650 (197) P= .020	.1521 (197) P= .033	.0189 (197) P= .792	-.0181 (197) P= .800	.1092 (197) P= .127	.2003 (197) P= .005	.0925 (197) P= .196	.0811 (197) P= .257	.0625 (197) P= .383	.1657 (197) P= .020	.1774 (197) P= .013
83	-.0985 (197) P= .168	-.0018 (197) P= .980	.0192 (197) P= .789	-.0099 (197) P= .891	-.1058 (197) P= .141	-.1088 (197) P= .130	-.0897 (197) P= .208	.0172 (197) P= .811	.0082 (197) P= .909	-.0704 (197) P= .325	-.0533 (197) P= .457
84	-.0330 (198) P= .645	.0271 (198) P= .704	-.0600 (198) P= .401	.1655 (198) P= .020	.0491 (198) P= .489	.0073 (198) P= .919	-.0115 (198) P= .873	-.0058 (198) P= .935	-.0581 (198) P= .849	.0719 (198) P= .314	-.0221 (198) P= .758
85	-.1147 (197) P= .109	-.0818 (197) P= .255	-.0263 (197) P= .714	.0093 (197) P= .897	.0157 (197) P= .827	-.0970 (197) P= .175	-.0902 (197) P= .208	-.0708 (197) P= .325	-.0276 (197) P= .700	-.0698 (197) P= .330	-.1280 (197) P= .073
	-.0208 (194) P= .696	-.0481 (194) P= .505	-.0118 (194) P= .870	.0152 (194) P= .833	-.0086 (194) P= .905	.0677 (194) P= .348	.0686 (194) P= .342	.0315 (194) P= .663	-.1082 (194) P= .148	-.0362 (194) P= .616	.0997 (194) P= .166
	.0179 (194) P= .804	.0108 (194) P= .885	-.0306 (194) P= .672	-.1498 (194) P= .038	-.1188 (194) P= .099	.0855 (194) P= .528	-.0193 (194) P= .790	-.1108 (194) P= .126	.0338 (194) P= .644	-.0852 (194) P= .237	-.0850 (194) P= .546
EC	.0257 (199) P= .719	.0598 (199) P= .404	.0561 (199) P= .431	-.0139 (199) P= .845	.0696 (199) P= .329	.1597 (199) P= .024	.1018 (199) P= .154	.0210 (199) P= .769	.0473 (199) P= .507	.0837 (199) P= .580	.1635 (199) P= .021
	.0143 (201) P= .840	.0538 (201) P= .448	.0879 (201) P= .215	.0904 (201) P= .202	.0622 (201) P= .381	.0752 (201) P= .289	.0348 (201) P= .627	.1249 (201) P= .077	.0016 (201) P= .000	.0966 (201) P= .172	.0788 (201) P= .266
	.0253 (201) P= .722	.1422 (201) P= .044	.1107 (201) P= .000	.1883 (201) P= .007	.1302 (201) P= .066	.1420 (201) P= .044	.0016 (201) P= .981	.0060 (201) P= .933	.1638 (201) P= .020	.1780 (201) P= .011	.0993 (201) P= .161
	.0452 (201) P= .524	.0122 (201) P= .863	-.0255 (201) P= .719	.0335 (201) P= .637	.1858 (201) P= .008	.0807 (201) P= .566	.0598 (201) P= .407	.0759 (201) P= .284	.1152 (201) P= .000	.1247 (201) P= .078	.0822 (201) P= .246
	.0885 (201) P= .212	.1928 (201) P= .006	.0485 (201) P= .494	.1229 (201) P= .082	.1889 (201) P= .007	.1803 (201) P= .010	.2741 (201) P= .000	.2267 (201) P= .001	-.0073 (201) P= .918	.2177 (201) P= .002	.5835 (201) P= .000

COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	L5	L6	L7	L8A	L8B	L9	L10	L11	EC	TS	FL
L5	1.0000 (201) P= .	.2707 (201) P= .000	.0452 (201) P= .524	.1224 (201) P= .083	.2511 (201) P= .000	.3735 (201) P= .000	.2278 (201) P= .001	.0266 (201) P= .000	.0719 (201) P= .311	.6090 (201) P= .000	.0897 (201) P= .000
L6	.2707 (201) P= .000	1.0000 (201) P= .	.1451 (201) P= .040	.2215 (201) P= .002	.3153 (201) P= .000	.3818 (201) P= .000	.2462 (201) P= .000	.3053 (201) P= .000	.1211 (201) P= .087	.6732 (201) P= .000	.0218 (201) P= .000
L7	.0452 (201) P= .524	.1451 (201) P= .040	1.0000 (201) P= .	.2420 (201) P= .001	.1145 (201) P= .106	.1687 (201) P= .017	.0588 (201) P= .407	.0759 (201) P= .284	.5084 (201) P= .000	.2005 (201) P= .004	.1860 (201) P= .039
L8A	.1224 (201) P= .083	.2215 (201) P= .002	.2420 (201) P= .001	1.0000 (201) P= .	.5070 (201) P= .000	.2208 (201) P= .002	.0095 (201) P= .894	.1460 (201) P= .039	.1997 (201) P= .004	.6729 (201) P= .000	.2036 (201) P= .004
L8B	.2511 (201) P= .000	.3153 (201) P= .000	.1145 (201) P= .106	.5070 (201) P= .000	1.0000 (201) P= .	.3008 (201) P= .000	.1946 (201) P= .006	.2093 (201) P= .003	.1902 (201) P= .007	.7520 (201) P= .000	.3865 (201) P= .000
L9	.3735 (201) P= .000	.3818 (201) P= .000	.1687 (201) P= .017	.2208 (201) P= .002	.3008 (201) P= .000	1.0000 (201) P= .	.3179 (201) P= .000	.2182 (201) P= .002	.1629 (201) P= .021	.8558 (201) P= .000	.7360 (201) P= .000
L10	.2278 (201) P= .001	.2462 (201) P= .000	.0588 (201) P= .407	.0095 (201) P= .894	.1946 (201) P= .006	.3179 (201) P= .000	1.0000 (201) P= .	.3398 (201) P= .000	.0729 (201) P= .304	.3509 (201) P= .000	.0899 (201) P= .000
L11	.0266 (201) P= .000	.3053 (201) P= .000	.0759 (201) P= .284	.1460 (201) P= .039	.2093 (201) P= .003	.2182 (201) P= .002	.3398 (201) P= .000	1.0000 (201) P= .	.1517 (201) P= .032	.0822 (201) P= .000	.0883 (201) P= .000
EC	.0719 (201) P= .311	.1211 (201) P= .087	.5084 (201) P= .000	.1997 (201) P= .004	.1902 (201) P= .007	.1629 (201) P= .021	.0729 (201) P= .304	.1517 (201) P= .032	1.0000 (201) P= .	.2357 (201) P= .001	.1615 (201) P= .022
TS	.6090 (201) P= .000	.6732 (201) P= .000	.2005 (201) P= .004	.6729 (201) P= .000	.7520 (201) P= .000	.8558 (201) P= .000	.3509 (201) P= .000	.0822 (201) P= .000	.2357 (201) P= .001	1.0000 (201) P= .	.5266 (201) P= .000
FL	.0897 (201) P= .000	.0218 (201) P= .000	.1860 (201) P= .039	.2036 (201) P= .004	.3865 (201) P= .000	.7360 (201) P= .000	.0899 (201) P= .000	.0883 (201) P= .000	.1615 (201) P= .022	.5266 (201) P= .000	1.0000 (201) P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CP	CSV	CRLS	PTL	B1	B2	B3	B4	B5	B8	B9
BBI	-.0285	-.0279	-.0128	-.0126	-.0921	-.0550	-.0656	.0284	-.0302	.0046	.0250
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .730	P= .695	P= .856	P= .859	P= .194	P= .438	P= .355	P= .689	P= .670	P= .949	P= .724
P3	-.1662	-.1396	-.2062	-.2189	.0849	.0062	.0520	-.1539	-.0320	-.0183	-.1037
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .018	P= .048	P= .003	P= .002	P= .231	P= .930	P= .463	P= .029	P= .652	P= .797	P= .143
P4	.1302	.2126	.2080	.2290	.0252	.0915	.0181	.0638	-.0368	.0785	.0578
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .065	P= .002	P= .003	P= .001	P= .722	P= .196	P= .843	P= .369	P= .608	P= .270	P= .415
P5	.0638	-.0275	.0692	.0875	.0241	.0098	-.0129	.0812	.0587	-.0292	.0216
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .371	P= .699	P= .329	P= .503	P= .738	P= .891	P= .856	P= .252	P= .481	P= .682	P= .761
B3	-.1287	-.0798	-.0705	-.1178	.1355	-.0225	.1892	-.2223	.0335	.1190	-.0857
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .069	P= .263	P= .320	P= .096	P= .055	P= .751	P= .035	P= .002	P= .637	P= .094	P= .226
B4	.0835	.1100	.1783	.1675	-.0289	.0683	-.1178	.1798	-.0863	.0220	.1275
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .238	P= .120	P= .013	P= .017	P= .726	P= .365	P= .096	P= .011	P= .223	P= .758	P= .071
B5	.1483	.0982	-.0256	.0780	-.0137	.0327	.0558	.1063	.0557	-.1057	-.0979
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .036	P= .165	P= .718	P= .297	P= .847	P= .645	P= .438	P= .133	P= .432	P= .137	P= .167
BCT2	-.2595	-.2700	-.2860	-.3516	-.0229	-.0829	-.0586	-.1710	-.0701	-.0799	.0000
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(198)	(200)
	P= .000	P= .000	P= .000	P= .000	P= .747	P= .243	P= .443	P= .015	P= .328	P= .263	P=1.000
BCT3	.2790	.3826	.3157	.3997	.0619	.1858	.1388	.2268	.1170	.1103	-.0188
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(198)	(200)
	P= .000	P= .000	P= .000	P= .000	P= .388	P= .040	P= .057	P= .001	P= .099	P= .122	P= .796
CRBT4	.0041	.1320	.1313	.1251	.0352	.0422	.1079	-.0005	.1115	-.0863	-.0803
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(198)	(200)
	P= .954	P= .062	P= .064	P= .078	P= .620	P= .553	P= .128	P= .994	P= .116	P= .227	P= .571
CRBT3	.1120	.0569	.0758	.0915	.0160	-.0560	-.0322	.0905	-.0769	.1512	-.0109
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(198)	(200)
	P= .114	P= .428	P= .286	P= .197	P= .822	P= .431	P= .650	P= .203	P= .279	P= .034	P= .878

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CP	CSV	CBLS	PTL	B1	B2	B3	B4	B5	B8	B9
BT2	-.0736	-.1521	-.1687	-.1728	.0038	.0190	-.0885	-.0815	-.0487	-.0471	.0381
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(198)	(200)
	P= .300	P= .032	P= .017	P= .014	P= .962	P= .789	P= .213	P= .559	P= .494	P= .510	P= .593
CL2	-.2108	-.2811	-.1151	-.2181	-.1330	-.1551	-.2098	-.2885	-.1187	-.0606	.0862
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .003	P= .001	P= .104	P= .002	P= .060	P= .028	P= .003	P= .000	P= .093	P= .395	P= .514
CL3	.2381	.3091	.2243	.3156	.1785	.3091	.2937	.3138	.1657	.1086	-.0398
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .001	P= .000	P= .001	P= .000	P= .011	P= .000	P= .000	P= .000	P= .019	P= .127	P= .575
BLS	-.2062	-.1149	-.1558	-.2002	-.0576	.0190	-.0157	-.0698	.0970	-.1191	-.1618
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .003	P= .104	P= .027	P= .004	P= .417	P= .789	P= .825	P= .328	P= .171	P= .094	P= .022
BL4	-.0597	.0202	.1100	.0488	.0378	.0864	.0652	.0175	.0850	-.0225	-.0220
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .400	P= .776	P= .120	P= .491	P= .598	P= .223	P= .358	P= .805	P= .526	P= .753	P= .757
BL5	.2302	.1586	.0653	.1737	.1199	.0201	.0500	.1208	-.0408	.1608	.1003
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .001	P= .025	P= .357	P= .014	P= .090	P= .777	P= .481	P= .089	P= .566	P= .023	P= .157
BL8	-.1210	-.1623	-.0331	-.1381	-.0321	.0126	-.0317	-.2817	-.1359	-.0568	.0363
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(198)	(200)
	P= .088	P= .044	P= .642	P= .058	P= .652	P= .859	P= .656	P= .001	P= .055	P= .427	P= .610
BL9	.1896	.1674	.0492	.1667	.0656	.0414	.0576	.2776	.0998	.0866	-.0318
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(198)	(200)
	P= .035	P= .018	P= .489	P= .018	P= .356	P= .560	P= .417	P= .000	P= .161	P= .225	P= .659
BT2	.1285	.0804	.0757	.1273	.0106	-.0344	.0245	-.0256	-.0882	.0260	-.0879
	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(197)	(198)
	P= .071	P= .260	P= .289	P= .074	P= .882	P= .630	P= .732	P= .721	P= .216	P= .717	P= .218
BT3	-.1903	-.2370	-.1780	-.2668	-.0353	-.0923	.0040	-.1086	.0936	-.0262	.1204
	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(197)	(198)
	P= .007	P= .001	P= .012	P= .000	P= .622	P= .196	P= .955	P= .128	P= .190	P= .715	P= .091
BT4	.0998	.2132	.1191	.1912	-.0017	.1058	-.0569	.1366	-.0197	.0332	-.1062
	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(197)	(198)
	P= .162	P= .003	P= .095	P= .007	P= .981	P= .138	P= .426	P= .055	P= .783	P= .648	P= .136

COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CP	CSV	CBLS	PTL	B1	B2	B3	B4	B5	B8	B9
EPIS2	-.0320	-.1140	-.0302	-.0793	.0845	.0703	-.0498	-.0195	-.1510	-.1112	.0584
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(197)	(199)
	P= .654	P= .109	P= .672	P= .265	P= .236	P= .324	P= .489	P= .784	P= .033	P= .120	P= .412
EPIS3	-.0713	-.1038	-.0615	-.1075	-.1930	-.1865	-.1326	-.1841	-.0329	-.0816	-.0377
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(197)	(199)
	P= .317	P= .146	P= .388	P= .131	P= .006	P= .008	P= .062	P= .009	P= .648	P= .256	P= .597
EPIS4	-.0574	.0382	.0224	.0130	.1246	.0709	.0802	.0520	-.0484	.0831	-.0782
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(197)	(199)
	P= .421	P= .631	P= .756	P= .855	P= .080	P= .319	P= .260	P= .465	P= .497	P= .548	P= .298
EPIS5	.1823	.1889	.0612	.1581	.0113	.0888	.0789	.1611	.1950	.1054	.1112
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(197)	(199)
	P= .010	P= .041	P= .391	P= .026	P= .875	P= .233	P= .268	P= .023	P= .006	P= .141	P= .118
ACT1	-.0740	.0488	-.0030	-.0005	.0307	-.0127	-.0880	.1185	.0358	.0674	.0600
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .297	P= .531	P= .966	P= .995	P= .666	P= .858	P= .898	P= .094	P= .616	P= .344	P= .397
ACT2	-.0338	.0200	.1217	.0679	.0093	.0487	-.0585	.1060	.0050	.1781	.0820
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .633	P= .778	P= .085	P= .338	P= .896	P= .492	P= .409	P= .134	P= .983	P= .012	P= .553
ACT3	.0330	.0061	.1819	.0873	.0370	.0512	.1906	.0703	.0360	-.0566	.1182
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .641	P= .932	P= .044	P= .218	P= .602	P= .470	P= .007	P= .321	P= .612	P= .427	P= .095
ACT4	.1398	.1217	.1251	.1760	.0096	.1062	.0904	.1817	.0923	-.1829	.0298
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .048	P= .085	P= .077	P= .012	P= .892	P= .138	P= .202	P= .045	P= .192	P= .048	P= .674
ACT5	-.0083	.1210	.0461	.0796	.0863	.1120	.1461	.0511	-.0190	.0275	-.0755
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .907	P= .087	P= .515	P= .261	P= .223	P= .113	P= .039	P= .471	P= .789	P= .700	P= .287
ACT6	.0521	.0556	.2066	.1381	.0858	.2001	.0907	.1105	.0061	.0818	.1809
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .463	P= .433	P= .003	P= .050	P= .226	P= .004	P= .200	P= .118	P= .931	P= .253	P= .046
BDR1	-.0228	.0518	-.0660	-.0385	-.0511	-.0929	-.1221	.0318	.0210	-.0817	.0482
	(198)	(198)	(198)	(198)	(198)	(198)	(196)	(199)	(198)	(196)	(198)
	P= .754	P= .469	P= .355	P= .629	P= .474	P= .193	P= .087	P= .657	P= .769	P= .562	P= .574

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CP	CSY	CBLS	PTL	B1	B2	B3	B4	B5	B8	B9
DM2	.1952	.2058	.0657	.1837	-.0096	.1450	.0914	.0218	.0273	-.0379	-.1240
	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(195)	(197)
	P= .006	P= .004	P= .359	P= .010	P= .893	P= .042	P= .202	P= .766	P= .704	P= .599	P= .082
DM3	-.0830	-.1384	-.0321	-.0798	.0136	-.0348	.0583	-.1097	-.0710	-.1027	.0708
	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(195)	(197)
	P= .549	P= .052	P= .654	P= .265	P= .850	P= .628	P= .416	P= .125	P= .321	P= .153	P= .323
DM4	-.0140	.0057	.0607	.0328	.0815	-.0513	.0733	.0073	-.0160	.2196	.0026
	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(198)	(196)	(198)
	P= .845	P= .937	P= .396	P= .646	P= .259	P= .473	P= .305	P= .919	P= .823	P= .002	P= .971
DM5	-.1188	-.1118	-.0282	-.0985	-.0338	.0720	-.0863	.0252	.0155	-.0534	-.0138
	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(195)	(197)
	P= .096	P= .118	P= .736	P= .167	P= .637	P= .315	P= .228	P= .725	P= .828	P= .459	P= .848
7	-.0225	.0566	.0032	.0255	-.0176	.0666	.0643	.0993	.0373	.0928	-.0152
	(194)	(194)	(194)	(194)	(194)	(194)	(194)	(194)	(194)	(192)	(194)
	P= .756	P= .433	P= .964	P= .724	P= .807	P= .356	P= .373	P= .168	P= .606	P= .200	P= .833
7	-.0266	.0109	-.1312	-.0719	-.0048	-.0239	-.0314	-.0761	-.0118	-.0579	.0199
	(194)	(194)	(194)	(194)	(194)	(194)	(194)	(194)	(194)	(192)	(194)
	P= .712	P= .880	P= .068	P= .319	P= .952	P= .741	P= .664	P= .291	P= .870	P= .425	P= .783
DEC	.0669	.1825	.0730	.1438	.0645	.0268	.0649	.1961	.0376	.1471	.0330
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(197)	(199)
	P= .352	P= .010	P= .306	P= .043	P= .366	P= .707	P= .363	P= .006	P= .598	P= .039	P= .636
1	.0929	.0336	.3191	.2106	.0294	.1382	.1344	.0338	.0725	.1263	.1611
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .189	P= .636	P= .000	P= .003	P= .678	P= .050	P= .057	P= .664	P= .306	P= .075	P= .022
2	.0737	.3536	.2390	.3062	-.0979	.0361	.0327	.0910	-.1117	.1861	.0897
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .299	P= .000	P= .001	P= .000	P= .167	P= .611	P= .645	P= .199	P= .115	P= .040	P= .864
3	.2084	.0467	.1333	.1718	.0515	-.0485	.1030	.0138	-.0248	.0767	-.0749
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .003	P= .510	P= .059	P= .015	P= .468	P= .498	P= .146	P= .846	P= .727	P= .281	P= .290
4	.2247	.2384	.4218	.3932	.0571	.0281	.1229	.0890	-.0315	.1312	.0984
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .001	P= .001	P= .000	P= .000	P= .421	P= .692	P= .082	P= .209	P= .657	P= .065	P= .165

COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	CP	CSV	CRLS	PTL	B1	B2	B3	B4	B5	B8	B9
	.7597	.7159	.2095	.5800	.1526	.1011	.2831	.3258	.2747	.0968	-.0218
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .003	P= .000	P= .031	P= .153	P= .000	P= .000	P= .000	P= .174	P= .758
	.7153	.8103	.3414	.6293	.0263	.0679	.2215	.2358	.1063	.0863	.0907
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .000	P= .000	P= .711	P= .338	P= .002	P= .001	P= .133	P= .225	P= .201
	.1183	.2338	.3628	.3202	.1245	.1811	.1030	.1824	-.0288	.0767	.1232
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .106	P= .001	P= .000	P= .000	P= .078	P= .010	P= .146	P= .044	P= .727	P= .281	P= .081
B	.2219	.2205	.8019	.5461	.0301	.0327	.1762	.1527	.0837	.0936	-.0054
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .002	P= .002	P= .000	P= .000	P= .671	P= .645	P= .012	P= .030	P= .237	P= .188	P= .940
B	.3730	.3504	.7875	.6504	.0383	.1302	.1489	.1518	.0501	.0118	-.0253
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .000	P= .000	P= .589	P= .066	P= .040	P= .031	P= .480	P= .868	P= .721
	.8238	.8010	.3399	.6580	-.0131	.1778	.1337	.2220	.1921	.1370	.0298
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .000	P= .000	P= .853	P= .012	P= .058	P= .002	P= .006	P= .054	P= .674
0	.3599	.5735	.1908	.4822	.0774	.0568	.1096	.2586	.1064	.0610	.0966
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201).	(199)	(201)
	P= .000	P= .000	P= .007	P= .000	P= .275	P= .423	P= .121	P= .000	P= .133	P= .392	P= .173
1	.7335	.8085	.2731	.5787	.1087	.0982	.2018	.3519	.1201	.2696	.1379
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .000	P= .000	P= .139	P= .165	P= .004	P= .000	P= .090	P= .000	P= .051
.	.2116	.1670	.4634	.3807	.0765	.1638	.1997	.1094	.0834	.1535	.1568
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .003	P= .018	P= .000	P= .000	P= .280	P= .020	P= .004	P= .122	P= .561	P= .030	P= .027
	.7716	.6270	.7823	.8879	.0918	.1215	.3137	.3203	.1909	.1067	.0158
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .000	P= .000	P= .197	P= .086	P= .000	P= .000	P= .007	P= .136	P= .828
	.6739	.8093	.8580	.8139	.0749	.1529	.2188	.3553	.1679	.2293	.1268
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .000	P= .000	P= .291	P= .030	P= .002	P= .000	P= .017	P= .001	P= .073

COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CP	CSV	CRLS	PTL	B1	B2	B3	B4	B5	B8	B9
CP	1.0000	.6875	.3823	.8102	.1308	.1088	.3281	.3980	.2192	.2005	.0737
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .	P= .000	P= .000	P= .000	P= .064	P= .124	P= .000	P= .000	P= .002	P= .005	P= .298
CSV	.6875	1.0000	.3792	.8169	.0538	.1486	.2311	.3598	.2278	.1677	.0547
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .	P= .000	P= .000	P= .452	P= .040	P= .001	P= .000	P= .001	P= .018	P= .440
CRLS	.3823	.3792	1.0000	.7738	.0755	.1472	.2358	.1979	.0679	.1314	.0782
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .	P= .000	P= .287	P= .037	P= .001	P= .005	P= .338	P= .064	P= .295
PTL	.8102	.8169	.7738	1.0000	.0922	.1730	.3143	.3811	.1810	.2141	.0966
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .000	P= .	P= .193	P= .014	P= .000	P= .000	P= .010	P= .002	P= .173
B1	.1308	.0538	.0755	.0922	1.0000	.3104	.3019	.1835	.0947	.1918	.0568
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .064	P= .452	P= .287	P= .193	P= .	P= .000	P= .000	P= .009	P= .181	P= .007	P= .426
B2	.1088	.1486	.1472	.1730	.3104	1.0000	.1883	.1270	-.0043	-.0012	.0497
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .124	P= .040	P= .037	P= .014	P= .000	P= .	P= .007	P= .072	P= .952	P= .987	P= .484
B3	.3281	.2311	.2358	.3143	.3019	.1883	1.0000	.2399	.1271	.1451	-.0053
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .001	P= .001	P= .000	P= .000	P= .007	P= .	P= .001	P= .072	P= .041	P= .940
B4	.3980	.3598	.1979	.3811	.1835	.1270	.2399	1.0000	.1505	.1676	.1821
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .000	P= .000	P= .005	P= .000	P= .009	P= .072	P= .001	P= .	P= .033	P= .018	P= .010
B5	.2192	.2278	.0679	.1810	.0947	-.0043	.1271	.1505	1.0000	.1512	.1199
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .002	P= .001	P= .338	P= .010	P= .181	P= .952	P= .072	P= .033	P= .	P= .033	P= .090
B8	.2005	.1677	.1314	.2141	.1918	-.0012	.1451	.1676	.1512	1.0000	.0281
	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)
	P= .005	P= .018	P= .064	P= .002	P= .007	P= .987	P= .041	P= .018	P= .033	P= .	P= .693
B9	.0737	.0547	.0782	.0966	.0568	.0497	-.0053	.1821	.1199	.0281	1.0000
	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(201)	(199)	(201)
	P= .298	P= .440	P= .295	P= .173	P= .426	P= .484	P= .940	P= .010	P= .090	P= .693	P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	B10	B11	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A
SEX	-.0348	.0142	.0928	.0249	.0288	.0396	.0988	.1391	.0381	.0758	.1180
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .623	P= .842	P= .190	P= .725	P= .689	P= .578	P= .163	P= .049	P= .591	P= .287	P= .107
P3	.0482	.0853	.0093	-.0837	-.0483	-.0122	-.1031	-.1401	-.1252	.0170	.0053
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .497	P= .229	P= .896	P= .238	P= .496	P= .864	P= .145	P= .047	P= .076	P= .811	P= .940
P4	-.0626	-.0507	.0412	.1022	.0610	.0835	.0493	.1102	.0632	.0846	-.0172
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .377	P= .475	P= .561	P= .149	P= .389	P= .240	P= .487	P= .119	P= .373	P= .529	P= .809
P5	.0283	-.0180	-.0960	.0064	-.0256	-.0958	-.0163	-.0326	-.0340	-.0621	-.0114
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .690	P= .800	P= .175	P= .928	P= .718	P= .179	P= .819	P= .646	P= .632	P= .382	P= .874
B3	.0273	.1737	-.1055	-.0285	-.0228	-.0987	-.0520	-.0766	-.1261	-.0264	.0311
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .701	P= .014	P= .136	P= .688	P= .748	P= .164	P= .464	P= .280	P= .074	P= .710	P= .661
B4	-.0322	-.1408	.0671	.1399	.0699	.0697	.1135	.0738	.0830	.0550	-.0362
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .650	P= .046	P= .344	P= .048	P= .324	P= .327	P= .109	P= .301	P= .241	P= .438	P= .610
B5	.0100	.0000	-.0146	-.0870	-.0385	.0522	-.0679	.0758	.0265	-.0649	-.0131
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .888	P=1.000	P= .837	P= .220	P= .588	P= .463	P= .338	P= .285	P= .709	P= .360	P= .854
SCT2	-.0170	-.0053	-.0200	-.1619	-.1538	-.0561	-.0738	-.1416	-.0255	-.0567	-.0313
	(200)	(200)	(200)	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(200)
	P= .811	P= .940	P= .778	P= .022	P= .030	P= .431	P= .302	P= .045	P= .720	P= .426	P= .659
SCT3	.0051	.0045	.0628	.2182	.1988	.0812	.0998	.1078	.0582	.0362	.0579
	(200)	(200)	(200)	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(200)
	P= .943	P= .949	P= .380	P= .002	P= .006	P= .563	P= .160	P= .130	P= .413	P= .611	P= .416
CHST4	.0431	-.0520	.0282	.0628	.0225	.0787	.1127	.1790	.1222	-.0719	.0332
	(200)	(200)	(200)	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(200)
	P= .545	P= .464	P= .692	P= .377	P= .752	P= .269	P= .112	P= .011	P= .085	P= .312	P= .641
CHST3	.0005	-.0575	.0203	.0818	.0537	-.0119	-.0263	-.2017	-.0603	.1052	-.0410
	(200)	(200)	(200)	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(200)
	P= .995	P= .419	P= .775	P= .556	P= .451	P= .868	P= .711	P= .004	P= .396	P= .138	P= .564

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B10	B11	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A
CHST2	-.0518	.0674	.0177	-.1172	-.0628	-.0873	-.0906	.0898	-.1279	.0729	.0143
	(200)	(200)	(200)	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(200)
	P= .466	P= .343	P= .803	P= .098	P= .377	P= .220	P= .202	P= .488	P= .071	P= .305	P= .842
SCL2	-.0295	-.0370	-.0186	-.0537	-.1477	-.0382	-.0999	-.0590	-.1156	.0788	-.0895
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .678	P= .602	P= .837	P= .449	P= .036	P= .591	P= .158	P= .405	P= .102	P= .266	P= .405
SCL3	.0288	-.0105	.1236	.1887	.2063	.1025	.1349	.0683	.0749	-.0052	.1298
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .685	P= .883	P= .080	P= .007	P= .003	P= .149	P= .056	P= .335	P= .291	P= .942	P= .066
CHSL5	-.0125	.0203	-.0027	.0776	-.0033	.1912	.0949	.1055	-.0962	-.1063	.0033
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .860	P= .775	P= .969	P= .274	P= .963	P= .007	P= .180	P= .136	P= .174	P= .133	P= .963
CHSL6	-.0178	-.0288	-.0105	.0156	-.0297	.0028	.0861	.0351	.1108	-.0998	.1476
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .806	P= .727	P= .883	P= .826	P= .676	P= .973	P= .224	P= .621	P= .117	P= .158	P= .037
CHSL3	.0502	-.0355	.0433	-.0087	.0719	-.1037	-.1080	-.0725	-.0519	.1297	-.0841
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .479	P= .617	P= .542	P= .903	P= .310	P= .144	P= .127	P= .307	P= .465	P= .066	P= .236
PSSL3	-.0038	-.1560	-.0181	.0168	-.1126	-.1829	-.0828	-.0608	-.0615	.0288	-.0011
	(200)	(200)	(200)	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(200)
	P= .962	P= .027	P= .843	P= .814	P= .112	P= .044	P= .551	P= .392	P= .387	P= .727	P= .988
PSSL4	.0170	.0707	.0511	-.0489	.1043	.1116	-.0059	.0682	.0703	.0017	.0450
	(200)	(200)	(200)	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(200)
	P= .811	P= .320	P= .472	P= .528	P= .142	P= .117	P= .933	P= .367	P= .323	P= .981	P= .725
PSST2	-.0849	-.1818	-.0750	-.0591	.0185	.0872	-.0853	.1751	-.0128	.1771	-.0673
	(198)	(198)	(198)	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(198)
	P= .238	P= .047	P= .294	P= .408	P= .796	P= .510	P= .526	P= .014	P= .862	P= .013	P= .346
PSST3	-.0098	.0829	.0065	.0806	-.1581	.0183	-.0112	-.1026	-.0753	-.0882	.0661
	(198)	(198)	(198)	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(198)
	P= .891	P= .548	P= .928	P= .259	P= .030	P= .841	P= .875	P= .150	P= .292	P= .217	P= .355
PSST4	.0563	.0785	.0770	-.0882	.1830	-.0825	.0678	.0025	.1300	-.0628	-.0863
	(198)	(198)	(198)	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(198)
	P= .431	P= .297	P= .281	P= .537	P= .010	P= .553	P= .345	P= .972	P= .068	P= .379	P= .517

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B10	B11	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A
EPIS2	.0696	-.0131	-.0771	.0163	-.0985	-.0334	-.0552	.0674	-.1886	-.0365	-.0289
	(199)	(199)	(199)	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(199)
	P= .329	P= .855	P= .279	P= .819	P= .166	P= .640	P= .438	P= .344	P= .008	P= .609	P= .747
EPIS3	-.0737	.0004	-.1674	-.0385	-.1318	-.0197	-.1051	.0391	-.2077	.0095	-.1986
	(199)	(199)	(199)	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(199)
	P= .301	P= .996	P= .018	P= .589	P= .063	P= .783	P= .139	P= .583	P= .003	P= .894	P= .005
EPIS4	.0863	-.0922	.2205	-.0237	.1008	.0160	.0871	-.0135	.2010	.0296	.2122
	(199)	(199)	(199)	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(199)
	P= .516	P= .195	P= .002	P= .740	P= .156	P= .822	P= .221	P= .850	P= .004	P= .678	P= .003
EPIS5	-.0162	.1326	-.0536	.0685	.0792	.0215	.0801	-.0686	.0875	-.0299	-.0360
	(199)	(199)	(199)	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(199)
	P= .821	P= .062	P= .452	P= .336	P= .266	P= .764	P= .573	P= .336	P= .219	P= .675	P= .614
ACT1	.0708	-.0647	.0607	-.2832	.0452	-.0312	.0720	-.1087	-.0014	.0103	-.0255
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .318	P= .361	P= .392	P= .001	P= .524	P= .661	P= .310	P= .125	P= .984	P= .884	P= .720
ACT2	.0488	.1651	.1343	-.0056	-.0810	-.0569	.0182	.1129	.0659	-.0164	.0891
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .532	P= .019	P= .057	P= .938	P= .563	P= .424	P= .798	P= .110	P= .352	P= .818	P= .208
ACT3	.1318	.0506	.0728	.0919	.1108	.0471	.0943	.0087	.0519	.0008	-.0525
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .062	P= .475	P= .304	P= .194	P= .117	P= .507	P= .183	P= .902	P= .464	P= .996	P= .459
ACT4	.0916	.0181	-.0114	.1303	.1439	.0812	.1601	.0383	.0058	-.0633	-.0509
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .196	P= .843	P= .872	P= .065	P= .042	P= .253	P= .023	P= .590	P= .935	P= .372	P= .473
ACT5	.0807	.0147	.1086	.0933	.1501	.0319	.1196	.0019	-.0082	.0611	.1106
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .567	P= .836	P= .125	P= .188	P= .033	P= .654	P= .091	P= .979	P= .908	P= .389	P= .118
ACT6	-.0242	.0580	.0917	.0103	.0744	.0551	.1058	-.0527	-.0340	-.0156	-.0182
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .733	P= .413	P= .196	P= .884	P= .294	P= .438	P= .135	P= .458	P= .632	P= .826	P= .796
BOY1	-.0612	.0164	.1112	-.0257	-.1154	-.0867	-.1389	-.0083	-.0388	-.0925	.0815
	(198)	(198)	(198)	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(198)
	P= .391	P= .818	P= .119	P= .719	P= .106	P= .225	P= .051	P= .907	P= .587	P= .195	P= .261

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	B10	B11	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A
BOW2	-.0745	-.0789	-.0304	.0359	.1146	.0842	.1330	.0959	.0605	.0189	.0459
	(197)	(197)	(197)	(197)	(197)	(196)	(197)	(197)	(197)	(197)	(197)
	P= .298	P= .270	P= .671	P= .617	P= .109	P= .240	P= .062	P= .180	P= .398	P= .792	P= .522
BOW3	-.0934	-.0600	-.0128	-.0386	-.1363	-.0821	-.1001	.0693	-.0081	.0812	-.0780
	(197)	(197)	(197)	(197)	(197)	(196)	(197)	(197)	(197)	(197)	(197)
	P= .192	P= .402	P= .858	P= .629	P= .056	P= .253	P= .162	P= .333	P= .911	P= .256	P= .301
BOW4	.0808	.0578	-.0551	-.0416	.0993	.0498	.0903	-.0839	.1106	.1249	-.0291
	(198)	(198)	(198)	(198)	(198)	(197)	(197)	(198)	(198)	(198)	(198)
	P= .258	P= .419	P= .441	P= .561	P= .164	P= .487	P= .206	P= .540	P= .121	P= .080	P= .684
BOW5	.1308	.0284	-.0596	.0528	.0501	.0561	.0478	-.1186	-.1351	-.1088	.0527
	(197)	(197)	(197)	(197)	(197)	(196)	(197)	(197)	(197)	(197)	(197)
	P= .067	P= .692	P= .406	P= .465	P= .485	P= .435	P= .508	P= .109	P= .058	P= .129	P= .462
BF	-.0012	.0484	.0184	.0285	.1928	.0767	.1370	.1032	.0738	-.1551	.0823
	(194)	(194)	(194)	(194)	(194)	(193)	(194)	(194)	(194)	(194)	(194)
	P= .987	P= .503	P= .799	P= .693	P= .007	P= .289	P= .057	P= .152	P= .306	P= .031	P= .558
BF	-.0276	.0633	-.0391	-.0099	-.0783	-.0609	-.0831	-.0106	-.0366	-.0018	-.0104
	(194)	(194)	(194)	(194)	(194)	(193)	(194)	(194)	(194)	(194)	(194)
	P= .703	P= .381	P= .588	P= .891	P= .303	P= .400	P= .249	P= .883	P= .613	P= .985	P= .885
FREC	.0782	.1120	.0264	.0787	.1595	.0316	.1823	.1516	.1900	-.2203	.0785
	(199)	(199)	(199)	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(199)
	P= .297	P= .115	P= .711	P= .269	P= .024	P= .659	P= .045	P= .033	P= .007	P= .002	P= .322
L1	.0196	-.0286	.0438	.1867	.0773	.0830	.0738	.0727	.0098	-.0852	-.1884
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .782	P= .687	P= .537	P= .008	P= .275	P= .243	P= .300	P= .305	P= .890	P= .528	P= .041
L2	-.0616	-.1268	.0699	.1317	.0273	-.0698	.0621	.0521	.0675	.1268	.0376
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .385	P= .074	P= .324	P= .062	P= .700	P= .362	P= .381	P= .463	P= .341	P= .074	P= .596
L3	.0231	-.0226	.0217	-.0138	-.0116	.0217	-.0503	.0759	.1312	.0587	-.0156
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .745	P= .750	P= .760	P= .851	P= .871	P= .760	P= .479	P= .284	P= .063	P= .408	P= .826
L4	.0616	.0506	.0735	.0733	.1072	.0003	.0365	.0863	.0819	-.0158	.1898
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .385	P= .476	P= .300	P= .301	P= .133	P= .996	P= .607	P= .223	P= .555	P= .824	P= .038

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	B10	B11	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A
L5	-.0399	-.0299	.0353	.0874	.2205	.0653	.0711	.2088	.1076	-.0073	-.0366
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .574	P= .674	P= .619	P= .217	P= .002	P= .358	P= .316	P= .003	P= .128	P= .919	P= .604
L6	.0293	.0512	.0444	.1828	.1503	.0641	.1275	.0918	.0299	.1195	-.0886
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .679	P= .470	P= .532	P= .048	P= .033	P= .367	P= .071	P= .195	P= .673	P= .091	P= .900
L7	-.0494	-.0904	.1897	.1697	.1086	-.1025	.0672	.0759	.0661	.0587	.1180
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .486	P= .202	P= .034	P= .016	P= .125	P= .149	P= .343	P= .284	P= .351	P= .408	P= .095
L8A	.0512	.0077	.0331	.1681	.0553	.0703	.1588	-.0215	-.0758	.1800	-.0329
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .470	P= .918	P= .641	P= .017	P= .435	P= .323	P= .025	P= .762	P= .287	P= .011	P= .643
L8B	.0193	-.0318	.1158	.1558	.1303	.0587	.1391	.0375	.0581	.1184	.0181
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .786	P= .658	P= .103	P= .027	P= .065	P= .482	P= .049	P= .597	P= .413	P= .098	P= .798
L9	-.0215	.0141	.1084	.0922	.3313	.1330	.2701	.1925	.2292	.0189	.0533
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .762	P= .843	P= .126	P= .193	P= .000	P= .060	P= .000	P= .006	P= .001	P= .790	P= .452
L10	-.0114	.0976	.1776	.1129	.2305	.0215	.1271	.2210	.2918	-.0028	.1131
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .872	P= .168	P= .012	P= .111	P= .001	P= .763	P= .072	P= .002	P= .000	P= .973	P= .110
L11	.0071	.0182	-.0335	.1877	.1763	.0152	.0126	.1719	.2117	.0532	.0250
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .920	P= .798	P= .636	P= .036	P= .012	P= .830	P= .859	P= .015	P= .003	P= .453	P= .725
BC	-.0066	-.0821	.1248	.2119	.1262	.0473	.1077	.1163	.0848	.0095	-.0677
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .926	P= .246	P= .077	P= .003	P= .074	P= .506	P= .128	P= .106	P= .231	P= .893	P= .339
TS	.0217	-.0083	.0829	.1880	.2007	.0936	.1818	.1181	.0986	.1820	-.0292
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .760	P= .906	P= .242	P= .008	P= .004	P= .187	P= .010	P= .095	P= .529	P= .044	P= .680
PL	.0054	.0597	.1190	.1600	.3377	.0793	.1908	.2580	.3028	.0289	.1148
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .939	P= .400	P= .092	P= .023	P= .000	P= .265	P= .007	P= .000	P= .000	P= .726	P= .106

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B10	B11	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A
CP	.0016	.0138	.0270	.1618	.2381	.0696	.0902	.2169	.1685	.0823	-.0121
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .982	P= .846	P= .695	P= .022	P= .001	P= .327	P= .203	P= .002	P= .020	P= .246	P= .865
CSV	-.0520	-.0137	.1451	.1492	.3392	.0804	.2189	.2710	.2672	.0856	.0513
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .464	P= .847	P= .035	P= .034	P= .000	P= .258	P= .002	P= .000	P= .000	P= .521	P= .469
CBLS	.0477	-.0181	.1287	.2463	.1536	.0628	.1784	.0622	.0162	.1329	.0180
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .501	P= .799	P= .070	P= .000	P= .029	P= .377	P= .011	P= .380	P= .820	P= .060	P= .800
PTL	.0077	.0000	.1309	.2880	.2980	.0878	.2138	.2160	.1915	.1197	.0368
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .914	P=1.000	P= .064	P= .000	P= .000	P= .216	P= .002	P= .002	P= .006	P= .090	P= .604
B1	.0699	-.1125	-.0383	.0721	.0740	-.0050	-.0230	.0758	-.0878	-.1885	.0325
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .328	P= .112	P= .589	P= .309	P= .296	P= .944	P= .746	P= .287	P= .504	P= .035	P= .647
B2	-.1827	.0253	.0381	.1659	.1618	.0228	.0671	.0521	-.0819	.0158	.1128
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .043	P= .722	P= .631	P= .019	P= .022	P= .748	P= .381	P= .463	P= .555	P= .824	P= .112
B3	.0266	.0306	.1416	.0858	.2317	.1598	.1584	.0622	.0790	.0818	.0803
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .707	P= .666	P= .045	P= .228	P= .001	P= .024	P= .025	P= .380	P= .265	P= .984	P= .257
B4	.0576	-.0359	.2686	.0899	.2478	.0386	.1958	.1193	.1661	-.0588	.0537
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .417	P= .618	P= .000	P= .204	P= .003	P= .588	P= .005	P= .092	P= .018	P= .680	P= .449
B5	.0749	-.0823	.0578	.1826	.0257	.1123	.0548	.0948	.0952	-.1376	.0190
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .291	P= .551	P= .415	P= .009	P= .717	P= .113	P= .443	P= .183	P= .179	P= .051	P= .789
B8	.0153	-.0945	.1946	.0765	.0280	.0004	.0106	.0372	.1618	-.1051	.0537
	(199)	(199)	(199)	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(199)
	P= .830	P= .184	P= .006	P= .283	P= .695	P= .995	P= .882	P= .602	P= .023	P= .139	P= .451
B9	.1453	.1309	.1015	.1039	-.0087	-.0518	.0158	.0317	.0582	-.0712	-.0536
	(201)	(201)	(201)	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(201)
	P= .040	P= .064	P= .151	P= .142	P= .903	P= .467	P= .824	P= .655	P= .412	P= .315	P= .449

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	B10	B11	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A
B10	1.0000 (201) P= .	.3194 (201) P= .000	.0275 (201) P= .699	.0630 (201) P= .374	-.0105 (201) P= .882	.2291 (200) P= .001	.1011 (201) P= .153	-.0220 (201) P= .756	.0148 (201) P= .835	-.1639 (201) P= .020	.0066 (201) P= .926
B11	.3194 (201) P= .000	1.0000 (201) P= .	.0353 (201) P= .619	.0874 (201) P= .217	.1147 (201) P= .105	.1302 (200) P= .066	.1099 (201) P= .120	.0182 (201) P= .798	.0000 (201) P=1.000	-.0290 (201) P= .683	.0078 (201) P= .917
B12	.0275 (201) P= .699	.0353 (201) P= .619	1.0000 (201) P= .	.1699 (201) P= .016	.0753 (201) P= .288	-.0462 (200) P= .516	.0823 (201) P= .246	.0951 (201) P= .179	.2260 (201) P= .001	.0094 (201) P= .895	-.0043 (201) P= .952
B13A	.0630 (201) P= .374	.0874 (201) P= .217	.1699 (201) P= .016	1.0000 (201) P= .	.1856 (201) P= .008	.0314 (200) P= .659	.1960 (201) P= .005	.0741 (201) P= .296	.1501 (201) P= .033	-.0877 (201) P= .216	-.0138 (201) P= .846
B13B	-.0105 (201) P= .882	.1147 (201) P= .105	.0753 (201) P= .288	.1856 (201) P= .008	1.0000 (201) P= .	.1551 (200) P= .028	.6083 (201) P= .000	.1599 (201) P= .023	.1154 (201) P= .103	-.0028 (201) P= .969	.0848 (201) P= .231
B14A	.2291 (200) P= .001	.1302 (200) P= .066	-.0462 (200) P= .516	.0314 (200) P= .659	.1551 (200) P= .028	1.0000 (200) P= .	.4813 (200) P= .000	.0485 (200) P= .495	-.0014 (200) P= .984	-.0388 (200) P= .629	.1209 (200) P= .088
B14B	.1011 (201) P= .153	.1099 (201) P= .120	.0823 (201) P= .246	.1960 (201) P= .005	.6083 (201) P= .000	.4813 (200) P= .000	1.0000 (201) P= .	.0838 (201) P= .239	.0832 (201) P= .240	-.0640 (201) P= .367	.0909 (201) P= .199
B15	-.0220 (201) P= .756	.0182 (201) P= .798	.0951 (201) P= .179	.0741 (201) P= .296	.1599 (201) P= .023	.0485 (200) P= .495	.0838 (201) P= .239	1.0000 (201) P= .	.0285 (201) P= .688	.0267 (201) P= .706	.0787 (201) P= .267
B16	.0148 (201) P= .835	.0000 (201) P=1.000	.2260 (201) P= .001	.1501 (201) P= .033	.1154 (201) P= .103	-.0014 (200) P= .984	.0832 (201) P= .240	.0285 (201) P= .688	1.0000 (201) P= .	-.0759 (201) P= .284	.1356 (201) P= .055
B17	-.1639 (201) P= .020	-.0290 (201) P= .683	.0094 (201) P= .895	-.0877 (201) P= .216	-.0028 (201) P= .969	-.0388 (200) P= .629	-.0640 (201) P= .367	.0267 (201) P= .706	-.0759 (201) P= .284	1.0000 (201) P= .	.0677 (201) P= .340
B18A	.0066 (201) P= .926	.0078 (201) P= .917	-.0043 (201) P= .952	-.0138 (201) P= .846	.0848 (201) P= .231	.1209 (200) P= .088	.0909 (201) P= .199	.0787 (201) P= .267	.1356 (201) P= .055	.0677 (201) P= .340	1.0000 (201) P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19A	B19B	B20	B21A	B21C	B21D	B21E	B21F	B21G	B21I	B21J
SEX	.0373	.0680	-.0208	-.1437	.0133	.0838	.0857	-.0051	-.0164	.0876	.0177
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .599	P= .337	P= .771	P= .042	P= .852	P= .237	P= .519	P= .963	P= .818	P= .219	P= .802
P3	-.0362	-.0746	-.0354	-.0506	-.1887	-.0659	-.0102	-.0953	.0780	-.0878	-.0330
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .610	P= .293	P= .619	P= .475	P= .009	P= .353	P= .885	P= .181	P= .271	P= .501	P= .644
P4	-.0108	.0596	-.1569	.0451	.0700	-.0274	.0155	-.0225	-.0793	-.0826	-.0620
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .880	P= .401	P= .027	P= .525	P= .329	P= .699	P= .827	P= .753	P= .263	P= .550	P= .384
P5	.1018	.0458	.1158	.0095	.0207	.0919	-.0572	.0781	.0586	.0803	.0955
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .150	P= .519	P= .103	P= .893	P= .771	P= .194	P= .420	P= .274	P= .481	P= .997	P= .177
B3	.0503	-.0732	-.0843	-.0209	-.1086	-.0953	-.0636	-.1757	.0271	-.0825	-.0608
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .478	P= .302	P= .235	P= .768	P= .125	P= .179	P= .370	P= .013	P= .702	P= .972	P= .391
B4	-.0514	.0076	.0300	.0485	.0291	.0179	.0863	.0789	-.0899	-.0803	-.0185
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .469	P= .915	P= .673	P= .531	P= .681	P= .801	P= .223	P= .269	P= .324	P= .259	P= .795
B5	.0329	.1055	.0278	-.0239	.0521	.1183	-.0618	.0896	.0522	.0397	.1886
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .642	P= .136	P= .696	P= .737	P= .462	P= .094	P= .383	P= .210	P= .462	P= .577	P= .017
SCY2	.0302	-.0938	.0871	-.0818	.0000	-.1719	-.0775	-.0916	.0308	-.1367	.0510
	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(197)	(200)	(199)	(200)
	P= .671	P= .187	P= .509	P= .249	P=1.000	P= .015	P= .276	P= .201	P= .669	P= .054	P= .473
SCY3	-.0366	.1248	-.0322	.1089	.0297	.1266	.1083	.0910	-.0808	.1213	-.1116
	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(197)	(200)	(199)	(200)
	P= .607	P= .078	P= .652	P= .125	P= .676	P= .074	P= .142	P= .204	P= .570	P= .088	P= .116
CBBY4	.0257	.0586	.0172	.0795	.0445	.0818	.1879	.0671	-.0295	.1634	.0691
	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(197)	(200)	(199)	(200)
	P= .718	P= .410	P= .809	P= .263	P= .531	P= .250	P= .037	P= .349	P= .678	P= .021	P= .331
CBBY3	-.0157	.0158	-.0706	-.0553	-.0250	-.1109	-.1635	-.0135	.0975	-.1196	-.1038
	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(197)	(200)	(199)	(200)
	P= .825	P= .824	P= .322	P= .437	P= .725	P= .118	P= .021	P= .851	P= .170	P= .107	P= .145

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19A	B19B	B20	B21A	B21C	B21D	B21E	B21F	B21G	B21I	B21J
CBST2	.0326	.0369	.0061	-.0883	-.0097	.0615	.0381	-.1283	-.0269	-.0276	-.0150
	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(197)	(200)	(199)	(200)
	P= .646	P= .604	P= .932	P= .497	P= .892	P= .387	P= .593	P= .072	P= .705	P= .699	P= .833
SCL2	-.0021	-.1127	-.0949	-.0619	.0521	-.1817	-.0618	-.0696	.1229	-.1390	.0265
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .976	P= .111	P= .181	P= .382	P= .462	P= .010	P= .383	P= .330	P= .082	P= .050	P= .709
SCL3	-.0805	.1179	.0780	.0725	-.0597	.1301	.0828	.0953	-.1243	.1138	-.1065
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .568	P= .096	P= .272	P= .306	P= .400	P= .066	P= .243	P= .181	P= .079	P= .110	P= .133
CBSL5	-.1089	-.0566	.0832	-.0829	-.0047	.0658	.0461	.0536	-.0787	-.0100	.1089
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .007	P= .425	P= .584	P= .242	P= .947	P= .356	P= .516	P= .453	P= .267	P= .888	P= .124
CBSL6	.0119	-.0458	-.0691	.0598	.0726	.1157	.1228	-.0876	-.0728	.1827	-.0082
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .867	P= .522	P= .331	P= .402	P= .306	P= .102	P= .082	P= .220	P= .307	P= .048	P= .908
CBSL9	.0888	.0882	.0028	.0379	-.0879	-.1329	-.1278	.0843	.0768	-.1313	-.0723
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .210	P= .213	P= .968	P= .593	P= .215	P= .060	P= .071	P= .535	P= .279	P= .064	P= .308
PBBL3	.0617	.0000	-.1013	-.0562	.0331	.0518	-.0358	.0105	-.1059	-.0597	-.0810
	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(197)	(200)	(199)	(200)
	P= .386	P=1.000	P= .155	P= .429	P= .642	P= .466	P= .619	P= .884	P= .136	P= .402	P= .569
PBBL4	-.0281	.0051	.0651	.0840	-.0387	-.0090	.0803	-.0071	.0969	.0529	.0290
	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(197)	(200)	(199)	(200)
	P= .693	P= .943	P= .361	P= .237	P= .626	P= .900	P= .571	P= .921	P= .172	P= .458	P= .684
PBBT2	-.0256	.0103	.0027	-.1049	-.1597	-.0351	-.2241	.0197	-.0377	-.1370	.0709
	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(195)	(198)	(197)	(198)
	P= .721	P= .885	P= .970	P= .141	P= .025	P= .624	P= .002	P= .785	P= .598	P= .055	P= .321
PBBT3	-.0068	-.1099	-.1420	.0600	.0407	.0564	.0869	-.0826	.1135	.1323	.1011
	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(195)	(198)	(197)	(198)
	P= .924	P= .123	P= .047	P= .401	P= .569	P= .430	P= .349	P= .555	P= .111	P= .064	P= .156
PBBT4	.0306	.1063	.1255	.0036	.0801	-.0337	.1136	.0220	-.0878	.0078	-.1576
	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(195)	(198)	(197)	(198)
	P= .669	P= .136	P= .079	P= .960	P= .262	P= .637	P= .112	P= .761	P= .219	P= .913	P= .027

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	B19A	B19B	B20	B21A	B21C	B21D	B21E	B21F	B21G	B21I	B21J
EPIS2	.1169	.1182	.0310	.0463	.0458	-.0501	-.0342	.0598	.0387	-.0999	.0484
	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(196)	(199)	(198)	(199)
	P= .100	P= .108	P= .665	P= .516	P= .520	P= .482	P= .632	P= .805	P= .588	P= .162	P= .497
EPIS3	.0631	-.0129	-.2037	-.1471	-.0857	-.0568	-.0790	-.0713	-.0392	-.1125	.0785
	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(196)	(199)	(198)	(199)
	P= .376	P= .856	P= .004	P= .038	P= .228	P= .426	P= .268	P= .320	P= .583	P= .115	P= .271
EPIS4	-.1004	-.0780	-.0050	.0355	-.0405	.0533	.0824	.0167	.0042	.1626	.0271
	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(196)	(199)	(198)	(199)
	P= .158	P= .273	P= .944	P= .619	P= .570	P= .455	P= .247	P= .816	P= .953	P= .022	P= .704
EPIS5	-.0086	.0535	.2319	.1001	.1308	.0253	.0028	.0282	.0181	-.0269	-.1595
	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(196)	(199)	(198)	(199)
	P= .904	P= .453	P= .001	P= .159	P= .066	P= .723	P= .968	P= .695	P= .799	P= .707	P= .026
ACT1	.0701	.0006	.0322	-.0507	-.0759	-.0512	.0600	.0385	-.0083	-.0023	-.0480
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .323	P= .994	P= .651	P= .474	P= .284	P= .470	P= .397	P= .629	P= .907	P= .974	P= .498
ACT2	.0891	.0272	.1109	.0895	.0776	.1124	-.0653	.0828	-.0801	.0591	-.0399
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .489	P= .702	P= .118	P= .485	P= .273	P= .112	P= .357	P= .549	P= .258	P= .406	P= .574
ACT3	-.0204	.0286	-.0336	.0409	.1311	.0175	-.0298	-.1294	-.0289	.0585	-.0211
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .774	P= .687	P= .636	P= .565	P= .064	P= .805	P= .674	P= .069	P= .684	P= .443	P= .767
ACT4	.0909	.0975	.0822	.1886	.0646	.0037	.1122	.0877	.0748	.0097	.0261
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .199	P= .169	P= .553	P= .041	P= .362	P= .959	P= .113	P= .219	P= .291	P= .891	P= .713
ACT5	-.0253	.0294	.0196	-.0048	-.0100	-.0470	.0321	-.0472	.0353	.0418	-.0507
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .721	P= .678	P= .783	P= .950	P= .888	P= .508	P= .651	P= .509	P= .619	P= .557	P= .475
ACT6	.1025	.0739	.0242	.0827	.0875	.0222	-.0298	-.0282	.0258	-.0207	-.0968
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .147	P= .297	P= .734	P= .243	P= .217	P= .754	P= .685	P= .694	P= .717	P= .772	P= .172
BOB1	-.0546	-.0084	-.0593	.0328	.0692	-.0290	-.0641	-.1101	-.0513	-.0409	.0330
	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(195)	(198)	(197)	(198)
	P= .445	P= .906	P= .408	P= .646	P= .332	P= .685	P= .370	P= .125	P= .473	P= .568	P= .644

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19A	B19B	B20	B21A	B21C	B21D	B21E	B21F	B21G	B21I	B21J
BOR2	-.1033	.0630	.1004	.1334	-.0241	.0332	.1142	.1856	.0004	.0665	.0015
	(197)	(197)	(196)	(197)	(197)	(197)	(197)	(194)	(197)	(196)	(197)
	P= .149	P= .379	P= .161	P= .062	P= .737	P= .643	P= .110	P= .010	P= .996	P= .354	P= .983
BOR3	.1787	-.0547	.0300	.0456	-.0669	.0384	.0898	.0015	.1194	-.1113	.0853
	(197)	(197)	(196)	(197)	(197)	(197)	(197)	(194)	(197)	(196)	(197)
	P= .012	P= .445	P= .676	P= .524	P= .350	P= .592	P= .467	P= .983	P= .095	P= .120	P= .233
BOR4	.0388	.0009	.0568	-.1019	-.0001	.0190	-.0891	.0020	-.0433	.1252	-.1899
	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(195)	(198)	(197)	(198)
	P= .587	P= .990	P= .428	P= .153	P= .999	P= .790	P= .212	P= .978	P= .544	P= .080	P= .007
BOR5	-.0861	.0068	-.1268	-.1036	.0155	-.1020	.0858	-.0821	-.0150	-.0311	.0526
	(197)	(197)	(196)	(197)	(197)	(197)	(197)	(194)	(197)	(196)	(197)
	P= .520	P= .929	P= .077	P= .147	P= .829	P= .158	P= .526	P= .255	P= .835	P= .665	P= .463
BF	.0042	.0415	.1396	-.0181	.0777	-.0105	.0567	.0798	.0372	.1334	-.0536
	(194)	(194)	(193)	(194)	(194)	(194)	(194)	(191)	(194)	(193)	(194)
	P= .958	P= .566	P= .053	P= .802	P= .281	P= .884	P= .432	P= .275	P= .607	P= .064	P= .456
SF	-.0761	-.1063	-.1628	-.0078	.0308	-.0006	-.0315	-.1368	-.0790	-.1199	.0152
	(194)	(194)	(193)	(194)	(194)	(194)	(194)	(191)	(194)	(193)	(194)
	P= .291	P= .140	P= .024	P= .914	P= .670	P= .994	P= .663	P= .059	P= .273	P= .097	P= .834
FDEC	-.1223	-.0232	.0802	-.0397	.1208	-.0129	-.0202	-.0699	-.0230	-.0019	-.0910
	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(196)	(199)	(198)	(199)
	P= .085	P= .745	P= .261	P= .578	P= .089	P= .857	P= .777	P= .330	P= .747	P= .979	P= .201
L1	-.0073	.0297	.0057	.0053	.0393	.0141	-.0481	-.0070	-.0643	.0774	.0098
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .918	P= .675	P= .936	P= .941	P= .580	P= .842	P= .498	P= .922	P= .365	P= .276	P= .890
L2	.0939	.1067	.0453	-.0420	.0962	.0637	.0866	-.0592	.0400	.0256	-.1148
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .185	P= .132	P= .524	P= .554	P= .176	P= .369	P= .221	P= .407	P= .573	P= .719	P= .105
L3	-.0489	.0796	.0150	.0358	-.0733	-.0035	.0572	.0404	-.1237	.1327	.0010
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .491	P= .261	P= .833	P= .618	P= .301	P= .960	P= .420	P= .572	P= .080	P= .061	P= .989
L4	.0499	.0276	-.0034	.0811	-.0019	.0283	.0612	.0387	.0325	.0262	-.1768
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .482	P= .697	P= .962	P= .253	P= .979	P= .732	P= .388	P= .589	P= .647	P= .712	P= .012

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19A	B19B	B20	B21A	B21C	B21D	B21E	B21F	B21G	B21I	B21J
L5	.0212	.2027	.1220	.1618	.0468	.1038	-.0873	.1144	.0642	.1184	-.0645
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .765	P= .004	P= .085	P= .022	P= .513	P= .142	P= .218	P= .108	P= .365	P= .095	P= .363
L6	.0767	.1691	.0068	.0087	.0897	.0699	.0693	.1223	.0365	.0759	-.1810
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .279	P= .016	P= .924	P= .947	P= .205	P= .329	P= .328	P= .086	P= .053	P= .286	P= .010
L7	.0796	.0796	-.0600	-.0348	.0951	-.0035	-.0089	-.0241	.0706	-.0828	-.1293
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .261	P= .261	P= .399	P= .628	P= .179	P= .960	P= .901	P= .736	P= .320	P= .551	P= .067
L8A	.0939	.1393	-.1175	-.0049	.0679	-.0199	.0170	.0333	.0547	.0737	-.1857
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .185	P= .049	P= .097	P= .944	P= .338	P= .780	P= .810	P= .641	P= .441	P= .300	P= .008
L8B	.1356	.1986	-.0738	.0069	.1243	.0081	-.0253	.0991	-.1038	.1208	-.1682
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .055	P= .005	P= .302	P= .923	P= .079	P= .909	P= .721	P= .165	P= .144	P= .088	P= .017
L9	.0108	.1973	.0131	.0793	.0909	-.0944	-.0118	.0375	.0388	.1408	-.1365
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .879	P= .005	P= .854	P= .263	P= .200	P= .183	P= .873	P= .600	P= .628	P= .047	P= .053
L10	.0695	.1623	.2248	.1731	.0882	.1138	.0331	.0792	-.0631	.1095	.0103
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .327	P= .021	P= .001	P= .014	P= .213	P= .108	P= .640	P= .299	P= .373	P= .123	P= .885
L11	.0370	.1491	.2147	.1135	.0150	.0862	.0317	.1185	.0400	.0952	-.0238
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .602	P= .035	P= .002	P= .109	P= .833	P= .223	P= .655	P= .096	P= .573	P= .180	P= .737
EC	-.0048	.0865	-.0285	.0137	.0488	.0188	.0063	.0163	-.0532	.1122	-.0632
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .951	P= .222	P= .730	P= .847	P= .528	P= .839	P= .930	P= .820	P= .453	P= .114	P= .373
TS	.1271	.2608	-.0112	.0712	.1097	.0609	-.0008	.1486	.0511	.1832	-.2199
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .072	P= .000	P= .875	P= .315	P= .121	P= .390	P= .990	P= .042	P= .472	P= .043	P= .002
FL	.0561	.2163	.1617	.1620	.0791	.0299	.0343	.0998	.0212	.1899	-.1231
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .429	P= .002	P= .022	P= .022	P= .268	P= .673	P= .628	P= .163	P= .765	P= .038	P= .084

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19A	B19B	B20	B21A	B21C	B21D	B21E	B21F	B21G	B21I	B21J
CP	.0526	.2825	.1480	.1255	.0583	.1133	.0131	.1618	.0904	.1873	-.1282
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .458	P= .001	P= .042	P= .076	P= .411	P= .109	P= .853	P= .023	P= .202	P= .037	P= .079
CSV	.0580	.2667	.1431	.1591	.1088	.0574	-.0058	.0739	.0428	.1592	-.1278
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .413	P= .000	P= .043	P= .024	P= .124	P= .418	P= .940	P= .301	P= .546	P= .024	P= .071
CBLS	.1318	.1853	-.0983	.0198	.1138	.0043	.0003	.0667	-.0175	.1125	-.2337
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .062	P= .008	P= .166	P= .780	P= .108	P= .952	P= .996	P= .351	P= .806	P= .113	P= .001
PTL	.1099	.2833	.0669	.1077	.1262	.0592	.0199	.1198	.0386	.1748	-.2100
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .120	P= .000	P= .346	P= .128	P= .076	P= .404	P= .779	P= .093	P= .586	P= .013	P= .003
B1	-.0168	-.0185	.0662	.0863	.0882	.0317	-.1550	.0532	-.0292	-.1059	-.0705
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .818	P= .796	P= .352	P= .223	P= .213	P= .655	P= .028	P= .457	P= .680	P= .136	P= .320
B2	-.0859	.0172	.0038	.0752	.1905	-.0683	.0127	.1058	-.0325	.0105	-.1513
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .226	P= .809	P= .962	P= .288	P= .007	P= .336	P= .858	P= .138	P= .647	P= .883	P= .034
B3	.0721	.1122	.0869	.0424	.0968	.0600	-.0053	.1838	-.1208	.1090	-.0758
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .309	P= .113	P= .221	P= .551	P= .173	P= .398	P= .940	P= .044	P= .088	P= .125	P= .287
B4	-.0373	.0825	.2035	.1437	.1716	.1872	.1199	.1176	-.0039	.1061	.0232
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .599	P= .246	P= .004	P= .042	P= .015	P= .008	P= .090	P= .099	P= .956	P= .135	P= .748
B5	-.0808	.0778	.0891	.3122	-.0713	.0230	.0581	.1291	.0226	.0016	.0382
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .256	P= .274	P= .210	P= .000	P= .318	P= .745	P= .413	P= .070	P= .750	P= .982	P= .629
B8	.0686	.1585	.2428	.0044	.0110	-.0480	-.1894	-.0377	.1146	.0153	-.2298
	(199)	(199)	(198)	(199)	(199)	(199)	(199)	(196)	(199)	(198)	(199)
	P= .336	P= .029	P= .001	P= .951	P= .877	P= .537	P= .035	P= .600	P= .107	P= .831	P= .001
B9	.0918	.0277	.0301	.2110	.1648	-.0083	-.0210	-.0182	.1180	.0132	-.0676
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .197	P= .696	P= .673	P= .003	P= .020	P= .907	P= .768	P= .800	P= .095	P= .853	P= .340

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19A	B19B	B20	B21A	B21C	B21D	B21E	B21F	B21G	B21I	B21J
010	-.0166 (201) P= .815	-.0438 (201) P= .537	-.0987 (200) P= .164	.0449 (201) P= .527	-.0230 (201) P= .746	.0298 (201) P= .674	-.0415 (201) P= .559	.0265 (198) P= .711	.0195 (201) P= .784	.0592 (200) P= .405	.0378 (201) P= .594
011	-.0637 (201) P= .369	-.1185 (201) P= .105	-.0516 (200) P= .468	-.0692 (201) P= .329	.0742 (201) P= .295	.0260 (201) P= .715	-.0436 (201) P= .538	-.1324 (198) P= .063	-.0428 (201) P= .546	.1320 (200) P= .062	-.0430 (201) P= .544
012	.0383 (201) P= .589	.1572 (201) P= .026	.1745 (200) P= .013	.0013 (201) P= .985	.0886 (201) P= .211	-.0088 (201) P= .901	-.0428 (201) P= .547	-.0780 (198) P= .275	.0751 (201) P= .289	.0437 (200) P= .539	-.0789 (201) P= .266
013A	-.0398 (201) P= .579	.1369 (201) P= .053	.1286 (200) P= .070	.2155 (201) P= .002	.1120 (201) P= .113	-.0290 (201) P= .683	.0645 (201) P= .363	.1103 (198) P= .122	.1056 (201) P= .136	.1891 (200) P= .035	.1118 (201) P= .116
013B	-.1105 (201) P= .119	.0673 (201) P= .342	.1296 (200) P= .067	.0073 (201) P= .918	.1148 (201) P= .105	.0272 (201) P= .701	.0687 (201) P= .332	.0479 (198) P= .503	-.0449 (201) P= .527	.1800 (200) P= .011	-.0118 (201) P= .868
014A	-.2008 (200) P= .004	-.0679 (200) P= .339	-.0457 (199) P= .522	-.0240 (200) P= .736	-.0005 (200) P= .994	-.0336 (200) P= .637	-.0291 (200) P= .683	-.0765 (197) P= .286	-.0029 (200) P= .968	-.0203 (199) P= .776	-.0581 (200) P= .414
014B	-.0846 (201) P= .233	.0423 (201) P= .551	.0851 (200) P= .231	-.0058 (201) P= .940	.1208 (201) P= .088	.0363 (201) P= .609	.0347 (201) P= .625	-.0861 (198) P= .228	.0188 (201) P= .839	.0782 (200) P= .271	-.0473 (201) P= .505
015	-.0663 (201) P= .350	.0526 (201) P= .458	.0639 (200) P= .369	.0578 (201) P= .419	.0150 (201) P= .833	.2481 (201) P= .000	.0317 (201) P= .655	.0698 (198) P= .332	-.1162 (201) P= .101	.0162 (200) P= .820	.1598 (201) P= .024
016	-.0055 (201) P= .938	.1240 (201) P= .079	.1864 (200) P= .008	.0483 (201) P= .496	.0295 (201) P= .677	.0480 (201) P= .498	-.0047 (201) P= .947	-.0524 (198) P= .464	.0853 (201) P= .228	.2083 (200) P= .003	.0488 (201) P= .492
017	.0806 (201) P= .567	-.0546 (201) P= .441	-.1023 (200) P= .150	-.0783 (201) P= .295	.0338 (201) P= .638	.0475 (201) P= .503	.0136 (201) P= .848	-.1125 (198) P= .115	-.0782 (201) P= .270	-.0628 (200) P= .377	-.0968 (201) P= .172
018A	-.1840 (201) P= .009	-.1598 (201) P= .023	-.0010 (200) P= .989	.0727 (201) P= .305	.1198 (201) P= .090	.0214 (201) P= .763	.0328 (201) P= .648	.0261 (198) P= .715	-.0568 (201) P= .427	.0651 (200) P= .360	.0082 (201) P= .908

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	B19A	B19B	B20	B21A	B21C	B21D	B21E	B21F	B21G	B21I	B21J
B19A	1.0000	.5536	.0386	-.0248	.0705	-.0540	.1121	.1068	.0079	.0319	-.0667
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .	P= .000	P= .587	P= .727	P= .320	P= .447	P= .113	P= .134	P= .912	P= .658	P= .347
B19B	.5536	1.0000	.1580	-.0289	-.0011	-.0810	.0535	.1403	.1335	.0205	-.1301
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .000	P= .	P= .025	P= .684	P= .987	P= .253	P= .451	P= .049	P= .059	P= .774	P= .066
B20	.0386	.1580	1.0000	.1124	.0985	.1404	-.1451	.1577	.0969	.0253	-.0287
	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(197)	(200)	(199)	(200)
	P= .587	P= .025	P= .	P= .113	P= .165	P= .047	P= .040	P= .027	P= .172	P= .722	P= .687
B21A	-.0248	-.0289	.1124	1.0000	.0158	.2263	.0762	.1659	-.0204	.1406	.1591
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .727	P= .684	P= .113	P= .	P= .823	P= .001	P= .283	P= .020	P= .774	P= .047	P= .026
B21C	.0705	-.0011	.0985	.0158	1.0000	.0867	.0559	.1162	-.0099	.0972	-.0240
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .320	P= .987	P= .165	P= .823	P= .	P= .221	P= .431	P= .103	P= .889	P= .171	P= .736
B21D	-.0540	-.0810	.1404	.2263	.0867	1.0000	.0929	.1747	-.0855	.1861	.2227
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .447	P= .253	P= .047	P= .001	P= .221	P= .	P= .190	P= .014	P= .227	P= .008	P= .001
B21E	.1121	.0535	-.1451	.0762	.0559	.0929	1.0000	.1700	-.0697	.1748	.0792
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .113	P= .451	P= .040	P= .283	P= .431	P= .190	P= .	P= .017	P= .325	P= .014	P= .264
B21F	.1068	.1403	.1577	.1659	.1162	.1747	.1700	1.0000	-.0229	.3381	.0711
	(198)	(198)	(197)	(198)	(198)	(198)	(198)	(198)	(198)	(197)	(198)
	P= .134	P= .049	P= .027	P= .020	P= .103	P= .014	P= .017	P= .	P= .748	P= .000	P= .320
B21G	.0079	.1335	.0969	-.0204	-.0099	-.0855	-.0697	-.0229	1.0000	.1488	-.1615
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .912	P= .059	P= .172	P= .774	P= .889	P= .227	P= .325	P= .748	P= .	P= .035	P= .022
B21I	.0319	.0205	.0253	.1406	.0972	.1861	.1748	.3381	.1488	1.0000	-.0292
	(200)	(200)	(199)	(200)	(200)	(200)	(200)	(197)	(200)	(200)	(200)
	P= .658	P= .774	P= .722	P= .047	P= .171	P= .008	P= .014	P= .000	P= .035	P= .	P= .681
B21J	-.0667	-.1301	-.0287	.1591	-.0240	.2227	.0792	.0711	-.1615	-.0292	1.0000
	(201)	(201)	(200)	(201)	(201)	(201)	(201)	(198)	(201)	(200)	(201)
	P= .347	P= .066	P= .687	P= .026	P= .736	P= .001	P= .264	P= .320	P= .022	P= .681	P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	BTL		BTL		BTL		BTL		BTL
SBI	.0713 (191) P= .327	CHST2	-.0603 (190) P= .409	EPIS2	-.0620 (189) P= .397	HOW2	.1041 (187) P= .156	L5	.3010 (191) P= .000
P3	-.1589 (191) P= .028	SCL2	-.2130 (191) P= .003	EPIS3	-.2382 (189) P= .001	HOW3	-.0460 (187) P= .532	L6	.2652 (191) P= .000
P4	.0630 (191) P= .387	SCL3	.3102 (191) P= .000	EPIS4	.1348 (189) P= .065	HOW4	.0763 (188) P= .298	L7	.1670 (191) P= .021
P5	.0460 (191) P= .527	CHSL5	-.0202 (191) P= .781	EPIS5	.1383 (189) P= .058	HOW5	-.0216 (187) P= .769	L8A	.1583 (191) P= .029
B3	-.1168 (191) P= .109	CHSL4	.0638 (191) P= .384	ACT1	.0132 (191) P= .856	HF	.1531 (184) P= .038	L8B	.1673 (191) P= .021
B4	.0913 (191) P= .209	CHSL3	.0352 (191) P= .629	ACT2	.1312 (191) P= .070	SF	-.1321 (184) P= .074	L9	.3040 (191) P= .000
B5	.0611 (191) P= .401	FOBL3	-.1575 (190) P= .030	ACT3	.1408 (191) P= .053	FDEC	.1205 (189) P= .099	L10	.3708 (191) P= .000
SCT2	-.1667 (190) P= .021	FOBL4	.1518 (190) P= .037	ACT4	.2008 (191) P= .005	L1	.1510 (191) P= .037	L11	.3508 (191) P= .000
SCT3	.2181 (190) P= .003	FOBT2	-.0851 (189) P= .248	ACT5	.1598 (191) P= .028	L2	.0657 (191) P= .366	EC	.2119 (191) P= .003
CHST4	.1598 (190) P= .028	FOBT3	.0205 (189) P= .779	ACT6	.1619 (191) P= .025	L3	.0269 (191) P= .712	TS	.3315 (191) P= .000
CHST3	-.0592 (190) P= .417	FOBT4	.0546 (189) P= .455	HOW1	-.1178 (188) P= .109	L4	.1600 (191) P= .027	FL	.4540 (191) P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	BTL		BTL		BTL
CP	.4033 (191) P= .000	B10	.2518 (191) P= .000	B19A	.1127 (191) P= .121
CSV	.4195 (191) P= .000	B11	.2068 (191) P= .004	B19B	.2695 (191) P= .000
CRLS	.2625 (191) P= .000	B12	.3409 (191) P= .000	B20	.3182 (191) P= .000
PTL	.4508 (191) P= .000	B13A	.4840 (191) P= .000	B21A	.2891 (191) P= .000
B1	.2053 (191) P= .004	B13B	.5108 (191) P= .000	B21C	.3081 (191) P= .000
B2	.1927 (191) P= .008	B14A	.2997 (191) P= .000	B21D	.2932 (191) P= .000
B3	.4061 (191) P= .000	B14B	.4695 (191) P= .000	B21E	.1939 (191) P= .007
B4	.5183 (191) P= .000	B15	.3128 (191) P= .000	B21F	.2767 (191) P= .000
B5	.3219 (191) P= .000	B16	.3882 (191) P= .000	B21G	.1397 (191) P= .058
B8	.2209 (191) P= .002	B17	-.0252 (191) P= .729	B21I	.3842 (191) P= .000
B9	.2661 (191) P= .000	B18A	.1802 (191) P= .013	B21J	.1178 (191) P= .104

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

Appendix G

CORRELATION MATRICES FOR JUNIOR-HIGH SCHOOL SAMPLE

See Appendix E for Variable Labels in the Following Correlation Matrices

	SEX	P1	P2	P3	P4	P5	M1	M2	M3	M4	SCT2
SEX	1.0000 (239) P= .	.0108 (239) P= .869	-.0978 (239) P= .132	-.0415 (239) P= .523	.0417 (239) P= .521	.1383 (239) P= .033	-.0782 (234) P= .228	.0420 (239) P= .518	-.0108 (239) P= .868	.0401 (239) P= .538	-.0710 (237) P= .276
P1	.0108 (239) P= .869	1.0000 (239) P= .	-.1579 (239) P= .015	-.2140 (239) P= .001	-.1726 (239) P= .007	-.0684 (239) P= .292	.5115 (239) P= .000	-.1763 (239) P= .006	-.1756 (239) P= .006	-.0997 (239) P= .124	.1728 (237) P= .008
P2	-.0978 (239) P= .132	-.1579 (239) P= .015	1.0000 (239) P= .	-.4147 (239) P= .000	-.3385 (239) P= .000	-.1327 (239) P= .040	.2137 (234) P= .001	.3653 (239) P= .000	-.3850 (239) P= .000	-.1615 (239) P= .012	.1608 (237) P= .013
P3	-.0415 (239) P= .523	-.2140 (239) P= .001	-.4147 (239) P= .000	1.0000 (239) P= .	-.4538 (239) P= .000	-.1798 (239) P= .005	-.2273 (234) P= .000	.0638 (239) P= .329	.2190 (239) P= .001	-.1499 (239) P= .020	-.1810 (237) P= .030
P4	.0417 (239) P= .521	-.1726 (239) P= .007	-.3385 (239) P= .000	-.4538 (239) P= .000	1.0000 (239) P= .	-.1450 (239) P= .025	-.2187 (234) P= .001	-.2467 (239) P= .000	.2588 (239) P= .000	.2136 (239) P= .001	-.1192 (237) P= .067
P5	.1383 (239) P= .033	-.0684 (239) P= .292	-.1327 (239) P= .040	-.1798 (239) P= .005	-.1450 (239) P= .025	1.0000 (239) P= .	-.1155 (234) P= .075	-.1069 (239) P= .099	-.0519 (239) P= .425	.3310 (239) P= .000	-.0480 (237) P= .462
M1	-.0782 (239) P= .228	.5115 (239) P= .000	.2137 (234) P= .001	-.2273 (239) P= .000	-.2187 (239) P= .001	-.1155 (239) P= .075	1.0000 (234) P= .	-.2975 (239) P= .000	-.4050 (239) P= .000	-.1683 (239) P= .009	.0818 (237) P= .210
M2	.0420 (239) P= .518	-.1763 (239) P= .006	.3653 (239) P= .000	.0638 (239) P= .329	-.2467 (239) P= .000	-.1069 (239) P= .099	-.2975 (234) P= .000	1.0000 (239) P= .	-.5194 (239) P= .000	-.2158 (239) P= .001	.0067 (237) P= .918
M3	-.0108 (239) P= .868	-.1756 (239) P= .006	-.3850 (239) P= .000	.2190 (239) P= .001	.2588 (239) P= .000	-.0519 (239) P= .425	-.4050 (234) P= .000	-.5194 (239) P= .000	1.0000 (239) P= .	-.2938 (239) P= .000	-.0391 (237) P= .549
M4	.0401 (239) P= .538	-.0997 (239) P= .124	-.1615 (239) P= .012	-.1499 (239) P= .020	.2136 (239) P= .001	.3310 (239) P= .000	-.1683 (234) P= .009	-.2158 (239) P= .001	-.2938 (239) P= .000	1.0000 (239) P= .	-.0320 (237) P= .625
SCT2	-.0710 (237) P= .276	.1728 (237) P= .008	.1608 (237) P= .013	-.1810 (237) P= .030	-.1192 (237) P= .067	-.0480 (237) P= .462	.0818 (237) P= .210	.0067 (237) P= .918	-.0391 (237) P= .549	-.0320 (237) P= .625	1.0000 (237) P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	SCT3	SCT4	SCT5	CRST4	CRST3	CRST2	SCL2	SCL3	SCL4	SCL5	CRSL4
SEX	-.0833	.0656	.1312	.2308	-.0992	-.1383	-.1078	-.0769	.0210	.1453	.0717
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .201	P= .315	P= .044	P= .000	P= .126	P= .033	P= .101	P= .240	P= .749	P= .026	P= .270
F1	.0127	-.0789	-.1338	-.0187	-.0896	.1060	.2031	.0528	-.1546	-.0864	-.0969
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .846	P= .226	P= .040	P= .776	P= .167	P= .102	P= .002	P= .421	P= .018	P= .187	P= .135
F2	.0590	-.0890	-.1521	-.0486	.0099	.1341	.1023	.0508	-.0813	-.1066	-.0137
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .366	P= .172	P= .019	P= .453	P= .878	P= .038	P= .118	P= .438	P= .529	P= .103	P= .833
F3	-.0007	.0386	.1088	.0581	.0630	-.1379	-.0925	.0066	.0085	.0883	.0180
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .991	P= .556	P= .095	P= .405	P= .332	P= .033	P= .157	P= .919	P= .896	P= .177	P= .782
F4	.0077	.0651	.0550	-.0076	-.0056	-.0100	-.0982	-.0615	.1169	.0006	-.0012
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .906	P= .319	P= .399	P= .907	P= .931	P= .878	P= .133	P= .348	P= .074	P= .995	P= .985
F5	-.1136	.0703	.1126	.0233	-.0669	-.0472	-.0778	-.0580	.0271	.1224	.1204
	(237)	(237)	(237)	(235)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .081	P= .281	P= .084	P= .720	P= .303	P= .468	P= .235	P= .376	P= .680	P= .061	P= .063
H1	.0357	-.0461	-.0969	-.0179	.0235	.0124	.1170	-.0111	-.0222	-.0815	-.0403
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .585	P= .480	P= .137	P= .783	P= .718	P= .849	P= .073	P= .865	P= .735	P= .213	P= .535
H2	.1199	-.0491	-.0965	.0585	-.0093	.0089	-.0358	.1520	-.0928	-.0529	-.0102
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .065	P= .452	P= .138	P= .801	P= .886	P= .892	P= .589	P= .020	P= .158	P= .419	P= .875
H3	-.0343	.0518	.0293	-.0658	.0306	.0121	-.0079	-.0385	.0392	.0323	-.0356
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .599	P= .427	P= .653	P= .311	P= .638	P= .853	P= .904	P= .557	P= .550	P= .622	P= .584
H4	-.1952	.0448	.2317	.0620	-.0427	-.0687	-.0648	-.1816	.0683	.1837	.1067
	(237)	(237)	(237)	(239)	(239)	(239)	(235)	(235)	(235)	(235)	(239)
	P= .003	P= .493	P= .000	P= .295	P= .512	P= .290	P= .308	P= .030	P= .297	P= .028	P= .100
SCT2	-.2668	-.2888	-.2070	-.2083	.0007	.1689	.5221	.0738	-.2695	-.2008	-.1105
	(237)	(237)	(237)	(237)	(237)	(237)	(235)	(235)	(235)	(235)	(237)
	P= .000	P= .000	P= .001	P= .002	P= .991	P= .009	P= .000	P= .260	P= .000	P= .002	P= .089

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	SCT3	SCT4	SCT5	CBST4	CMST3	CMST2	SCL2	SCL3	SCL4	SCL5	CMSL4
SCT3	1.0000 (237) P= .	-.4886 (237) P= .000	-.3187 (237) P= .000	-.2206 (237) P= .001	.1451 (237) P= .025	.1087 (237) P= .095	-.1406 (235) P= .031	.3665 (235) P= .000	-.0313 (235) P= .633	-.2822 (235) P= .000	-.1208 (237) P= .063
SCT4	-.4886 (237) P= .000	1.0000 (237) P= .	-.3450 (237) P= .000	.1379 (237) P= .034	.0383 (237) P= .599	-.1297 (237) P= .046	-.2222 (235) P= .001	-.0995 (235) P= .128	.3241 (235) P= .000	-.0287 (235) P= .662	.0547 (237) P= .402
SCT5	-.3187 (237) P= .000	-.3450 (237) P= .000	1.0000 (237) P= .	.2910 (237) P= .000	-.1762 (237) P= .007	-.2035 (237) P= .002	-.1607 (235) P= .014	-.3179 (235) P= .000	-.0361 (235) P= .581	.5781 (235) P= .000	.1909 (237) P= .003
CBST4	-.2206 (237) P= .001	.1379 (237) P= .034	.2910 (237) P= .000	1.0000 (239) P= .	-.5958 (239) P= .000	-.2022 (239) P= .002	-.1217 (235) P= .062	-.0870 (235) P= .184	.0622 (235) P= .342	.1756 (235) P= .007	.2264 (239) P= .000
CBST3	.1451 (237) P= .025	.0383 (237) P= .599	-.1762 (237) P= .007	-.5958 (239) P= .000	1.0000 (239) P= .	-.5055 (239) P= .000	-.0032 (235) P= .961	.0866 (235) P= .186	-.0086 (235) P= .895	-.1381 (235) P= .034	-.1512 (239) P= .019
CBST2	.1087 (237) P= .095	-.1297 (237) P= .046	-.2035 (237) P= .002	-.2022 (239) P= .002	-.5055 (239) P= .000	1.0000 (239) P= .	.1585 (235) P= .015	.0326 (235) P= .619	-.0073 (235) P= .911	-.1358 (235) P= .038	-.1087 (239) P= .094
SCL2	-.1406 (235) P= .031	-.2222 (235) P= .001	-.1607 (235) P= .014	-.1217 (235) P= .062	-.0032 (235) P= .961	.1585 (235) P= .015	1.0000 (235) P= .	-.2331 (235) P= .000	-.2265 (235) P= .000	-.1583 (235) P= .018	-.1193 (235) P= .068
SCL3	.3665 (235) P= .000	-.0995 (235) P= .128	-.3179 (235) P= .000	-.0870 (235) P= .184	.0866 (235) P= .186	.0326 (235) P= .619	-.2331 (235) P= .000	1.0000 (235) P= .	-.5112 (235) P= .000	-.3881 (235) P= .000	-.2392 (235) P= .000
SCL4	-.0313 (235) P= .633	.3241 (235) P= .000	-.0361 (235) P= .581	.0622 (235) P= .342	-.0086 (235) P= .895	-.0073 (235) P= .911	-.2265 (235) P= .000	-.5112 (235) P= .000	1.0000 (235) P= .	-.3383 (235) P= .000	.1622 (235) P= .013
SCL5	-.2822 (235) P= .000	-.0287 (235) P= .662	.5781 (235) P= .000	.1756 (235) P= .007	-.1381 (235) P= .034	-.1358 (235) P= .038	-.1583 (235) P= .018	-.3881 (235) P= .000	-.3383 (235) P= .000	1.0000 (235) P= .	.2377 (235) P= .000
CBSL4	-.1208 (237) P= .063	.0547 (237) P= .402	.1909 (237) P= .003	.2264 (239) P= .000	-.1512 (239) P= .019	-.1087 (239) P= .094	-.1193 (235) P= .068	-.2392 (235) P= .000	.1622 (235) P= .013	.2377 (235) P= .000	1.0000 (239) P= .

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	CHSL3	CHSL2	FUNL1	FUNL2	FUNL3	FUNL4	FUNT2	FUNT3	FUNT4	EPIS2	EPIS3
SEX	-.0999	.0169	-.0094	.0053	.0136	-.0178	-.1213	-.1887	.3003	-.1246	-.0899
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .124	P= .795	P= .885	P= .935	P= .835	P= .790	P= .061	P= .004	P= .000	P= .054	P= .642
P1	-.0472	.1698	.0015	-.0402	.0279	.0027	-.0997	.0892	.0258	.1901	-.0043
	(239)	(239)	(239)	(239)	(239)	(239)	(234)	(239)	(239)	(239)	(239)
	P= .468	P= .009	P= .982	P= .536	P= .668	P= .967	P= .128	P= .849	P= .696	P= .003	P= .948
P2	-.0514	.1225	-.0020	.0498	-.0138	-.0304	.1240	-.1115	-.0387	-.0396	.1130
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .429	P= .059	P= .975	P= .444	P= .832	P= .640	P= .056	P= .085	P= .893	P= .542	P= .081
P3	.1238	-.1727	.0508	-.0716	.0493	-.0288	-.0380	.1057	-.0802	.0011	-.0151
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .057	P= .007	P= .436	P= .270	P= .448	P= .708	P= .559	P= .103	P= .217	P= .986	P= .816
P4	-.0826	.0073	-.0200	.0182	-.0512	.0654	-.0292	.0189	.0261	-.1226	-.0365
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .513	P= .911	P= .758	P= .827	P= .431	P= .314	P= .653	P= .819	P= .689	P= .058	P= .575
P5	-.0584	-.0581	-.0575	.0938	-.0399	-.0061	.0347	-.1332	.1298	.0537	-.1066
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .369	P= .371	P= .376	P= .148	P= .539	P= .926	P= .593	P= .040	P= .046	P= .408	P= .100
B1	-.0471	.1568	.1208	-.0099	-.1073	.0770	.0036	-.0037	-.0277	.1263	.0358
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .468	P= .015	P= .063	P= .879	P= .098	P= .236	P= .956	P= .954	P= .670	P= .051	P= .582
B2	.0686	-.0262	-.1069	.0058	.0603	-.0195	.1148	-.0642	-.0068	-.0286	.0785
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .291	P= .687	P= .099	P= .929	P= .353	P= .764	P= .076	P= .323	P= .917	P= .705	P= .227
B3	.0285	-.0357	.0605	-.0955	.0686	-.0265	-.1301	.0762	.0187	-.0217	-.0296
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .706	P= .583	P= .352	P= .141	P= .320	P= .683	P= .044	P= .241	P= .773	P= .739	P= .648
B4	-.0850	-.0846	-.0838	.1366	-.0305	-.0852	-.0358	.0239	.0118	-.0720	-.1012
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .190	P= .192	P= .197	P= .035	P= .639	P= .487	P= .582	P= .713	P= .861	P= .268	P= .119
SCT2	.0150	.1360	.0564	-.0568	.0596	-.0564	.1583	.0826	-.1652	.2586	.1080
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .819	P= .036	P= .387	P= .387	P= .361	P= .387	P= .015	P= .518	P= .011	P= .000	P= .110

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CRSL3	CRSL2	FUNL1	FUNL2	FUNL3	FUNL4	FUNT2	FUNT3	FUNT4	EPIS2	EPIS3
CT3	.1473	-.0089	.0088	.1414	-.1438	.0412	-.0169	.0398	-.0484	-.0124	.1520
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .023	P= .892	P= .893	P= .030	P= .027	P= .528	P= .795	P= .543	P= .458	P= .849	P= .019
CT4	-.0335	.0080	-.0088	-.0163	.0290	-.0163	-.0129	-.0093	.0446	-.0928	-.0623
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .608	P= .903	P= .892	P= .803	P= .657	P= .803	P= .843	P= .887	P= .495	P= .154	P= .340
CT5	-.1366	-.1351	-.0269	-.0780	.0485	.0361	-.1807	-.0679	.1651	-.1515	-.1920
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .036	P= .038	P= .681	P= .231	P= .495	P= .580	P= .030	P= .298	P= .011	P= .020	P= .003
BST4	-.1883	-.0767	-.0235	-.0185	.0112	.0182	-.0683	-.1238	.1755	-.0869	-.1661
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .003	P= .237	P= .718	P= .823	P= .863	P= .827	P= .293	P= .056	P= .007	P= .181	P= .010
BST3	.2739	-.0671	.0083	-.0539	.0430	-.0077	-.0153	.1528	-.1878	-.0129	.0580
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .000	P= .302	P= .898	P= .407	P= .508	P= .905	P= .815	P= .018	P= .022	P= .843	P= .374
BST2	-.0325	.1630	.0050	.1053	-.0169	-.0868	.1213	-.0325	-.0585	.1233	.1708
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .617	P= .012	P= .938	P= .104	P= .801	P= .181	P= .061	P= .617	P= .368	P= .057	P= .008
CL2	.0967	.0530	-.0778	.0137	.0755	-.0648	.1195	.0698	-.1858	.2689	.0050
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .139	P= .419	P= .235	P= .835	P= .249	P= .322	P= .067	P= .287	P= .026	P= .000	P= .939
CL3	.0566	.2300	.1770	.0375	-.0300	-.1069	.0011	.0887	-.0612	.0893	.1226
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .387	P= .000	P= .007	P= .568	P= .647	P= .102	P= .987	P= .895	P= .350	P= .173	P= .061
CL4	.0889	-.1687	-.0520	.0742	.0038	-.0472	-.0181	-.0148	.0151	-.1893	.0047
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .178	P= .010	P= .428	P= .257	P= .954	P= .471	P= .782	P= .822	P= .817	P= .022	P= .967
CL5	-.2091	-.2141	-.1161	-.1261	-.0439	.2550	-.0650	-.1164	.1883	-.1836	-.1861
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .001	P= .001	P= .076	P= .053	P= .503	P= .000	P= .321	P= .075	P= .004	P= .028	P= .025
BSL4	-.5678	-.2159	-.0683	-.1548	.0470	.1349	-.0652	-.0688	.0663	-.0532	-.1577
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .000	P= .001	P= .293	P= .017	P= .469	P= .037	P= .316	P= .289	P= .307	P= .413	P= .015

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	CHSL3	CHSL2	FUBL1	FUBL2	FUBL3	FUBL4	FUBT2	FUBT3	FUBT4	EPIS2	EPIS3
CHSL3	1.0000	-.5286	-.0584	.0073	.1559	-.1763	.0239	.0543	-.0319	-.0459	.1396
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .	P= .000	P= .369	P= .911	P= .016	P= .006	P= .713	P= .403	P= .624	P= .480	P= .031
CHSL2	-.5286	1.0000	.1890	.1053	-.0639	-.1373	.0593	.0167	-.0669	.1872	.0208
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .000	P= .	P= .003	P= .104	P= .325	P= .038	P= .361	P= .797	P= .303	P= .004	P= .749
FUBL1	-.0584	.1890	1.0000	-.1059	-.3059	-.1059	-.0245	-.0210	.0078	.1053	.0047
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .369	P= .003	P= .	P= .102	P= .000	P= .102	P= .706	P= .747	P= .904	P= .104	P= .943
FUBL2	.0073	.1053	-.1059	1.0000	-.5632	-.1950	-.0088	.1680	-.1598	.0673	.0581
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .911	P= .104	P= .102	P= .	P= .000	P= .002	P= .892	P= .009	P= .013	P= .300	P= .405
FUBL3	.1559	-.0639	-.3059	-.5632	1.0000	-.5632	.0802	-.0363	-.0066	-.0311	.0718
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .016	P= .325	P= .000	P= .000	P= .	P= .000	P= .216	P= .577	P= .919	P= .632	P= .272
FUBL4	-.1763	-.1373	-.1059	-.1950	-.5632	1.0000	-.0816	-.1075	.1636	-.0910	-.1507
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .006	P= .038	P= .102	P= .002	P= .000	P= .	P= .209	P= .097	P= .011	P= .161	P= .020
FUBT2	.0239	.0593	-.0245	-.0088	.0802	-.0816	1.0000	-.8119	-.2249	.0807	.1688
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .713	P= .361	P= .706	P= .892	P= .216	P= .209	P= .	P= .000	P= .000	P= .531	P= .009
FUBT3	.0543	.0167	-.0210	.1680	-.0363	-.1075	-.8119	1.0000	-.7588	.1201	.0543
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .403	P= .797	P= .747	P= .009	P= .577	P= .097	P= .000	P= .	P= .000	P= .064	P= .403
FUBT4	-.0319	-.0669	.0078	-.1598	-.0066	.1636	-.2249	-.7588	1.0000	-.1939	-.1779
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .624	P= .303	P= .904	P= .013	P= .919	P= .011	P= .000	P= .000	P= .	P= .003	P= .006
EPIS2	-.0459	.1872	.1053	.0673	-.0311	-.0910	.0807	.1201	-.1939	1.0000	-.3824
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .480	P= .004	P= .104	P= .300	P= .632	P= .161	P= .531	P= .064	P= .003	P= .	P= .000
EPIS3	.1396	.0208	.0047	.0581	.0718	-.1507	.1688	.0543	-.1779	-.3824	1.0000
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .031	P= .749	P= .943	P= .405	P= .272	P= .020	P= .009	P= .403	P= .006	P= .000	P= .

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	EPIS4	ACT1	ACT2	ACT3	ACT4	ACT5	ACT6	MOM1	MOM2	MOM3	MOM4
SEX	.1282	.0807	.1486	.2502	.2352	.0932	.1112	.1264	-.1846	-.2526	.1056
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .055	P= .214	P= .022	P= .000	P= .000	P= .151	P= .086	P= .053	P= .005	P= .000	P= .107
P1	-.1127	-.0037	-.0683	-.0587	-.0467	-.0861	-.0258	.0181	.0132	.0680	-.0885
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .082	P= .955	P= .293	P= .400	P= .472	P= .185	P= .695	P= .782	P= .841	P= .301	P= .177
P2	-.1018	-.0118	-.0210	-.1061	.0079	.0851	-.0273	.0439	.0123	.0337	-.0001
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .118	P= .856	P= .747	P= .102	P= .904	P= .487	P= .674	P= .503	P= .851	P= .608	P= .999
P3	.0258	-.0385	-.0979	-.0195	-.1440	.0240	-.0308	-.0226	.0938	-.1125	.0729
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .692	P= .553	P= .131	P= .765	P= .026	P= .712	P= .636	P= .730	P= .152	P= .086	P= .267
P4	.1038	.0503	.1962	.1150	.1238	.0112	.0242	-.0043	-.0946	.0187	-.0698
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .111	P= .439	P= .002	P= .076	P= .056	P= .863	P= .709	P= .947	P= .148	P= .776	P= .290
P5	.0916	.0187	-.0425	.0879	.0863	-.0813	.1136	-.0338	-.0460	.0364	.0548
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .158	P= .773	P= .513	P= .461	P= .184	P= .211	P= .080	P= .611	P= .476	P= .579	P= .404
H1	-.0895	-.0290	-.0997	-.1250	-.0555	-.0292	-.0123	-.0164	.0867	-.0139	-.0186
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .168	P= .656	P= .124	P= .054	P= .393	P= .654	P= .850	P= .802	P= .185	P= .833	P= .845
H2	-.0878	.0452	-.0844	-.0822	-.0943	.0235	-.0372	.0804	-.0481	-.0710	.0900
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .178	P= .487	P= .193	P= .516	P= .146	P= .717	P= .567	P= .220	P= .501	P= .279	P= .170
H3	.0318	.0073	.1066	.0204	.0296	.0413	-.0993	-.0752	.0562	.0896	-.0568
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .625	P= .911	P= .100	P= .754	P= .649	P= .525	P= .126	P= .251	P= .391	P= .172	P= .387
H4	.1615	-.0299	.0160	.2067	.1257	-.0601	.1655	-.0023	-.0861	.0135	-.0471
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .012	P= .645	P= .806	P= .001	P= .052	P= .355	P= .010	P= .972	P= .188	P= .837	P= .474
SCT2	-.2617	-.0539	-.1331	-.1411	-.0386	.0126	-.0346	-.0779	.0122	.1805	.0779
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(233)	(233)	(232)	(232)
	P= .000	P= .409	P= .041	P= .030	P= .555	P= .847	P= .596	P= .236	P= .853	P= .006	P= .238

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	EPIS0	ACT1	ACT2	ACT3	ACT4	ACT5	ACT6	NON1	NON2	NON3	NON4
SCT3	-.0919	-.0818	.0378	-.1185	-.1555	-.0269	-.0230	-.0381	.1145	.1011	-.0679
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(233)	(233)	(232)	(232)
	P= .158	P= .210	P= .567	P= .079	P= .017	P= .680	P= .715	P= .562	P= .081	P= .125	P= .303
SCT4	.0636	.0555	-.1229	.1870	.1958	.0603	.0245	.0158	-.0830	-.0522	.0052
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(233)	(233)	(232)	(232)
	P= .330	P= .395	P= .059	P= .004	P= .003	P= .355	P= .707	P= .815	P= .207	P= .428	P= .938
SCT5	.3121	.0589	.2585	.0655	.0488	-.0488	.0681	.0705	-.0532	-.1831	-.0168
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(233)	(233)	(232)	(232)
	P= .000	P= .400	P= .000	P= .315	P= .497	P= .497	P= .296	P= .284	P= .419	P= .005	P= .799
CHST4	.1916	.0590	.0815	.0185	.1239	.0472	.0139	.0202	.0009	-.2072	.0416
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .003	P= .364	P= .209	P= .824	P= .056	P= .467	P= .831	P= .758	P= .989	P= .001	P= .527
CHST3	-.0510	-.0500	-.0926	.0007	-.1210	.0126	-.0328	.0475	-.0596	.1041	-.0690
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .433	P= .441	P= .153	P= .992	P= .062	P= .847	P= .614	P= .468	P= .363	P= .112	P= .293
CHST2	-.2336	-.0025	.0057	-.0192	.0156	-.0080	.0346	-.1090	.0709	.1120	.0432
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .000	P= .969	P= .930	P= .768	P= .810	P= .903	P= .595	P= .096	P= .279	P= .087	P= .510
SCL2	-.1787	-.0809	-.1276	-.1222	-.0816	-.0112	-.0907	-.0322	.0831	.0934	.0374
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(231)	(231)	(230)	(230)
	P= .006	P= .217	P= .051	P= .061	P= .213	P= .864	P= .166	P= .626	P= .208	P= .158	P= .573
SCL3	-.2046	-.1069	-.1052	-.2601	-.1983	.0287	-.0947	.0709	.0139	.1200	-.1303
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(231)	(231)	(230)	(230)
	P= .002	P= .102	P= .108	P= .000	P= .002	P= .661	P= .148	P= .283	P= .833	P= .069	P= .048
SCL4	.0965	.0517	-.0427	.2123	.1337	-.0676	.0697	-.1318	.0732	-.0295	.0508
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(231)	(231)	(230)	(230)
	P= .140	P= .431	P= .515	P= .001	P= .041	P= .302	P= .287	P= .045	P= .268	P= .656	P= .447
SCL5	.2793	.1096	.3183	.1286	.1406	.0782	.0817	.0695	-.1091	-.1772	.0587
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(231)	(231)	(230)	(230)
	P= .000	P= .094	P= .000	P= .049	P= .031	P= .232	P= .212	P= .293	P= .098	P= .007	P= .376
CHSL4	.2235	.0166	.1175	.0929	.0382	-.0292	.0796	-.0541	-.0323	-.1374	.1368
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .000	P= .799	P= .070	P= .152	P= .557	P= .654	P= .220	P= .409	P= .623	P= .036	P= .037

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	EPIS4	ACT1	ACT2	ACT3	ACT4	ACT5	ACT6	HOW1	HOW2	HOW3	HOW4
CHSL3	-.1140	-.0051	-.1031	.0817	-.1168	.0084	-.0431	-.0087	.1624	.0243	-.1038
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .079	P= .937	P= .112	P= .521	P= .071	P= .897	P= .507	P= .894	P= .013	P= .711	P= .113
CHSL2	-.1858	-.0681	-.0895	-.1088	.0029	-.0190	-.0222	.0483	-.1027	.1752	-.0837
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .020	P= .324	P= .446	P= .093	P= .965	P= .770	P= .733	P= .462	P= .116	P= .007	P= .506
FSHL1	-.1782	.0187	-.0960	-.1023	.0056	-.0813	-.0977	-.0696	.1239	-.0189	.0124
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .006	P= .773	P= .139	P= .115	P= .932	P= .211	P= .132	P= .288	P= .058	P= .774	P= .851
FSHL2	-.0679	-.1102	-.0455	-.0731	.0103	.0224	-.0502	.0381	.0815	.0236	-.0705
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .296	P= .089	P= .484	P= .260	P= .875	P= .730	P= .440	P= .561	P= .213	P= .720	P= .283
FSHL3	-.0118	-.0246	.0181	.1065	-.0371	-.0336	.0727	-.0033	-.0360	.0566	-.0439
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .860	P= .706	P= .828	P= .101	P= .568	P= .605	P= .263	P= .959	P= .583	P= .389	P= .504
FSHL4	.1923	.1309	.0858	-.0040	.0350	.0716	.0146	.0075	-.1117	-.0871	.1216
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .003	P= .043	P= .186	P= .951	P= .590	P= .270	P= .822	P= .908	P= .087	P= .184	P= .063
FSHT2	-.2038	.0273	-.0619	-.0670	-.0507	.0275	.0501	-.0723	.1036	.0008	.0081
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .002	P= .675	P= .340	P= .302	P= .435	P= .673	P= .441	P= .270	P= .113	P= .995	P= .902
FSHT3	-.0963	-.1135	-.0539	-.0101	-.0426	.0084	-.0674	-.0838	-.0642	.1493	.0136
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .138	P= .080	P= .407	P= .876	P= .513	P= .897	P= .300	P= .203	P= .327	P= .022	P= .836
FSHT4	.2709	.1135	.0622	.0638	.0685	-.0323	.0276	.1628	-.0205	-.1873	-.0810
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .000	P= .080	P= .338	P= .326	P= .321	P= .619	P= .673	P= .012	P= .755	P= .024	P= .533
EPIS2	-.3129	-.0054	-.0329	-.1522	-.0690	-.1525	-.0710	-.0658	.0086	.1381	.0817
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .000	P= .934	P= .613	P= .019	P= .288	P= .018	P= .274	P= .315	P= .895	P= .090	P= .213
EPIS3	-.6746	-.0833	-.0466	-.0200	-.1119	.0728	-.0810	-.0311	.1101	.0300	-.0217
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .000	P= .199	P= .473	P= .759	P= .084	P= .262	P= .212	P= .635	P= .092	P= .647	P= .742

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	EPIS4	ACT1	ACT2	ACT3	ACT4	ACT5	ACT6	HOM1	HOM2	HOM3	HOM4
EPIS4	1.0000	.0380	.1080	.1157	.1482	.0372	.1228	.0776	-.1126	-.1379	-.0162
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .	P= .559	P= .096	P= .074	P= .022	P= .567	P= .058	P= .236	P= .085	P= .035	P= .806
ACT1	.0380	1.0000	.0551	.0973	.1898	.0107	.0008	-.1098	-.1551	.0023	.2200
	(239)	(239)	(239)	(239)	(239)	(239)	(234)	(235)	(235)	(234)	(234)
	P= .559	P= .	P= .396	P= .134	P= .021	P= .870	P= .995	P= .094	P= .017	P= .972	P= .001
ACT2	.1080	.0551	1.0000	.1085	.1910	.0021	.2189	-.1087	-.0513	-.0638	.1576
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .096	P= .396	P= .	P= .094	P= .003	P= .974	P= .001	P= .110	P= .433	P= .331	P= .016
ACT3	.1157	.0973	.1085	1.0000	.2949	-.0856	.2390	-.1127	-.1068	-.0726	.0855
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .074	P= .134	P= .094	P= .	P= .000	P= .187	P= .000	P= .085	P= .103	P= .269	P= .192
ACT4	.1482	.1898	.1910	.2949	1.0000	.1329	.2071	-.0800	-.1796	-.1180	.0581
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .022	P= .021	P= .003	P= .000	P= .	P= .040	P= .001	P= .582	P= .006	P= .072	P= .377
ACT5	.0372	.0107	.0021	-.0856	.1329	1.0000	.0360	-.0258	-.0811	-.0602	.0753
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .567	P= .870	P= .974	P= .187	P= .040	P= .	P= .580	P= .694	P= .215	P= .359	P= .251
ACT6	.1228	.0008	.2189	.2390	.2071	.0360	1.0000	.0148	-.1764	.0071	-.0036
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(235)	(235)	(234)	(234)
	P= .058	P= .995	P= .001	P= .000	P= .001	P= .580	P= .	P= .821	P= .007	P= .914	P= .956
HOM1	.0776	-.1098	-.1087	-.1127	-.0800	-.0258	.0148	1.0000	-.3257	-.4302	-.4565
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(234)	(234)
	P= .236	P= .094	P= .110	P= .085	P= .582	P= .694	P= .821	P= .	P= .000	P= .000	P= .000
HOM2	-.1126	-.1551	-.0513	-.1068	-.1796	-.0811	-.1764	-.3257	1.0000	-.0798	-.1472
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(235)	(234)	(234)
	P= .085	P= .017	P= .433	P= .103	P= .006	P= .215	P= .007	P= .000	P= .	P= .226	P= .024
HOM3	-.1379	.0023	-.0638	-.0726	-.1180	-.0602	.0071	-.4302	-.0798	1.0000	-.0800
	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)
	P= .035	P= .972	P= .331	P= .269	P= .072	P= .359	P= .914	P= .000	P= .226	P= .	P= .223
HOM4	-.0162	.2200	.1576	.0855	.0581	.0753	-.0036	-.4565	-.1472	-.0800	1.0000
	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)
	P= .806	P= .001	P= .016	P= .192	P= .377	P= .251	P= .956	P= .000	P= .024	P= .223	P= .

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	BDBS	BF	SF	LF	FDBC	L1	L3	L4	L5	L6	L8A
EE	.2022	.2109	.3533	-.2119	.2628	.0098	.0808	.1745	-.0577	.1475	.0566
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .002	P= .001	P= .000	P= .001	P= .000	P= .885	P= .193	P= .007	P= .375	P= .023	P= .384
I	-.0483	.0480	-.0732	.1351	-.1140	-.0714	-.0387	-.0488	-.1810	-.2673	-.2869
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .461	P= .461	P= .260	P= .037	P= .080	P= .272	P= .551	P= .453	P= .029	P= .000	P= .000
2	-.0580	-.0823	-.0926	-.0329	-.1516	.0456	.0850	-.0981	-.1067	.0078	-.0009
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .410	P= .516	P= .156	P= .614	P= .020	P= .483	P= .201	P= .130	P= .100	P= .905	P= .988
3	-.0627	-.1007	.0843	.0464	.0479	-.0124	-.0173	.0740	.0766	.0559	.0058
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .339	P= .121	P= .195	P= .476	P= .463	P= .849	P= .790	P= .254	P= .238	P= .390	P= .928
4	.1653	.0520	.0036	-.0884	.1133	.0200	-.0422	-.0292	.0583	.0647	.0840
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .011	P= .425	P= .956	P= .174	P= .082	P= .758	P= .516	P= .653	P= .370	P= .319	P= .196
5	-.0003	.1472	.0285	-.0096	.1231	-.0238	-.0015	.1532	.1305	.0377	.0977
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .997	P= .023	P= .662	P= .883	P= .059	P= .714	P= .982	P= .018	P= .044	P= .562	P= .132
6	-.0685	-.0036	-.0471	.0768	-.2035	-.0261	-.0653	-.0995	-.1080	-.1008	-.1102
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .325	P= .957	P= .470	P= .238	P= .002	P= .688	P= .315	P= .125	P= .096	P= .120	P= .089
7	-.0807	.0488	.0150	-.1242	.0472	.0243	.0388	.0246	.0169	.0713	.0908
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .534	P= .458	P= .818	P= .056	P= .470	P= .708	P= .596	P= .705	P= .795	P= .272	P= .162
8	.0117	-.0600	.0533	.0380	.0613	-.0230	-.0175	.0881	.0660	.0465	-.0223
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .858	P= .357	P= .413	P= .560	P= .347	P= .723	P= .788	P= .175	P= .310	P= .478	P= .732
9	.1272	.0021	-.0134	.0335	.0977	.0245	.0488	-.0789	-.0003	-.0251	.0653
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .052	P= .974	P= .837	P= .607	P= .138	P= .706	P= .453	P= .224	P= .996	P= .699	P= .318
CP2	-.1951	-.1125	-.0543	.1299	-.2009	.0480	.0696	-.1081	-.1297	-.1277	-.0334
	(233)	(236)	(236)	(236)	(235)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .003	P= .085	P= .406	P= .046	P= .002	P= .462	P= .286	P= .097	P= .046	P= .050	P= .611

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	BDBS	BF	SF	LF	FDEC	L1	L3	L4	L5	L6	L8A
SCT3	-.1318	-.0262	-.1380	.1723	-.1589	-.0896	.0342	-.1358	.0343	.0888	-.1354
	(233)	(236)	(236)	(236)	(235)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .045	P= .689	P= .040	P= .008	P= .015	P= .448	P= .601	P= .037	P= .599	P= .458	P= .038
SCT4	.1108	.0657	.0385	-.1120	.0777	.0888	-.0516	.0159	.0578	.0202	.1040
	(233)	(236)	(236)	(236)	(235)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .093	P= .315	P= .556	P= .086	P= .236	P= .458	P= .429	P= .807	P= .376	P= .757	P= .110
SCT5	.2191	.0541	.1918	-.1517	.3302	-.0196	-.0258	.2656	.0350	.1575	.1130
	(233)	(236)	(236)	(236)	(235)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .001	P= .408	P= .003	P= .020	P= .000	P= .764	P= .693	P= .000	P= .591	P= .015	P= .083
CBST4	.1898	.1604	.1181	-.1523	.2006	-.0233	.0187	.1703	.1169	.0937	.1077
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .022	P= .013	P= .069	P= .019	P= .002	P= .720	P= .774	P= .008	P= .071	P= .149	P= .097
CBST3	-.0126	-.1650	.0301	.0182	-.1789	-.0083	.0249	-.0975	-.1135	.0139	-.0805
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .848	P= .011	P= .644	P= .827	P= .006	P= .898	P= .702	P= .133	P= .080	P= .830	P= .533
CBST2	-.1128	-.1111	-.1479	.1636	-.0805	-.0050	-.0612	-.1447	-.0290	-.1571	-.0685
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .084	P= .087	P= .022	P= .011	P= .217	P= .938	P= .346	P= .025	P= .656	P= .015	P= .292
SCL2	-.1937	-.0705	-.1172	.0115	-.1988	.0139	.0897	-.1109	-.0541	-.1397	-.0803
	(231)	(234)	(234)	(234)	(233)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .003	P= .283	P= .073	P= .862	P= .002	P= .833	P= .170	P= .090	P= .409	P= .032	P= .220
SCL3	-.1028	-.1222	-.1259	.2481	-.2582	-.0203	-.0780	-.1381	.0181	-.0845	-.1192
	(231)	(234)	(234)	(234)	(233)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .121	P= .062	P= .058	P= .000	P= .000	P= .757	P= .259	P= .040	P= .829	P= .497	P= .066
SCL4	.0686	-.0252	.0507	-.1416	.0688	.0520	-.0822	.0499	.1013	.0801	.1020
	(231)	(234)	(234)	(234)	(233)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .299	P= .702	P= .440	P= .030	P= .327	P= .428	P= .209	P= .447	P= .121	P= .221	P= .116
SCL5	.1595	.2028	.2035	-.1431	.4096	-.0270	.1340	.2236	-.0365	.1836	.0998
	(231)	(234)	(234)	(234)	(233)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .015	P= .002	P= .002	P= .029	P= .000	P= .680	P= .040	P= .001	P= .577	P= .005	P= .127
CBSL8	.1065	.1318	.1279	-.1124	.2006	.0683	-.0248	.0380	.0870	.0904	.1082
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .104	P= .042	P= .049	P= .084	P= .002	P= .293	P= .703	P= .559	P= .180	P= .164	P= .108

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	BOWS	MF	SF	LF	FDEC	L1	L3	L4	L5	L6	L6A
CHSL3	-.0795	-.0981	-.0115	.0247	-.0881	-.1660	.0472	-.0305	.0471	.0512	-.0540
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .225	P= .131	P= .860	P= .704	P= .176	P= .010	P= .468	P= .638	P= .469	P= .430	P= .406
CHSL2	-.0812	-.1258	-.1634	.1375	-.1715	.1075	-.0844	-.0127	-.0703	-.1939	-.0420
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .215	P= .053	P= .012	P= .034	P= .008	P= .097	P= .193	P= .846	P= .279	P= .003	P= .518
FSHL1	-.0253	-.0860	-.0846	.3168	-.1757	-.0238	.0684	-.0285	.0188	-.0721	-.0688
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .699	P= .186	P= .194	P= .000	P= .007	P= .714	P= .292	P= .706	P= .777	P= .267	P= .350
FSHL2	-.0848	-.0112	-.1713	.0666	-.0620	-.0439	-.0885	-.1179	-.0807	.0357	-.0186
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .195	P= .863	P= .008	P= .306	P= .342	P= .500	P= .173	P= .069	P= .216	P= .583	P= .044
FSHL3	.0236	-.2128	.1466	-.0938	-.0268	.0019	.0048	.0526	.0618	.0307	.1000
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .719	P= .001	P= .024	P= .151	P= .686	P= .977	P= .941	P= .419	P= .341	P= .637	P= .123
FSHL4	.0698	.3427	.0258	-.1377	.2038	.0560	.0402	.0639	-.0119	-.0317	-.0795
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .286	P= .000	P= .652	P= .034	P= .002	P= .389	P= .536	P= .325	P= .855	P= .626	P= .221
FSHT2	-.1147	-.0361	-.0582	.0384	-.0383	.0285	.0488	-.0358	.0541	-.1051	.0269
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .079	P= .579	P= .371	P= .556	P= .557	P= .706	P= .453	P= .582	P= .405	P= .105	P= .679
FSHT3	.0498	-.1819	-.1058	.0822	-.1820	-.0538	-.0814	-.2885	-.1075	-.0245	-.0055
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .447	P= .005	P= .105	P= .206	P= .005	P= .407	P= .210	P= .000	P= .097	P= .706	P= .933
FSHT4	.0260	.2343	.1460	-.1033	.2381	.0733	.0843	.2771	.1225	.1390	-.0011
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .692	P= .000	P= .024	P= .112	P= .000	P= .259	P= .195	P= .000	P= .059	P= .032	P= .986
SPIS2	-.1087	-.0771	-.1320	.1167	-.1610	-.0022	-.1015	-.1096	-.1138	-.1508	-.1630
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .097	P= .236	P= .042	P= .072	P= .013	P= .974	P= .118	P= .091	P= .080	P= .020	P= .011
SPIS3	-.1096	-.1102	-.0716	.1060	-.1188	-.1159	-.0276	-.1822	.0109	-.0248	.0320
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .094	P= .090	P= .271	P= .103	P= .068	P= .074	P= .671	P= .005	P= .867	P= .703	P= .618

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	BDW5	MP	SP	LP	PDEC	L1	L3	L4	L5	L6	L8A
BPIS4	.1602	.1481	.1558	-.2010	.2336	.1011	.0795	.2457	.1048	.1307	.1024
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .014	P= .022	P= .016	P= .002	P= .000	P= .119	P= .220	P= .000	P= .106	P= .043	P= .114
ACT1	.0799	.1921	-.0236	.0481	.0309	-.0187	.0037	.0845	-.0752	-.0628	-.0004
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .222	P= .003	P= .718	P= .460	P= .636	P= .773	P= .955	P= .193	P= .247	P= .334	P= .995
ACT2	.0961	.0865	.0918	-.0391	.1601	.0425	.0223	.1718	-.0995	.0823	-.0800
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .142	P= .184	P= .160	P= .549	P= .014	P= .513	P= .732	P= .008	P= .145	P= .205	P= .218
ACT3	.2458	.0271	.1591	-.1640	.2100	-.0855	-.0421	.1246	.0001	.0867	.0781
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .000	P= .678	P= .014	P= .011	P= .001	P= .188	P= .517	P= .054	P= .998	P= .182	P= .229
ACT4	.3048	.1432	.1004	-.1705	.0899	.0752	.0814	.0963	-.0741	.1187	.0551
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .000	P= .027	P= .123	P= .008	P= .168	P= .247	P= .210	P= .138	P= .254	P= .077	P= .397
ACT5	.1114	.0368	-.0103	-.0501	-.0260	.0812	.0517	-.0601	.0579	.0684	-.0100
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .088	P= .572	P= .874	P= .442	P= .691	P= .526	P= .426	P= .355	P= .373	P= .292	P= .878
ACT6	.1495	-.0325	.1298	-.0423	.0262	-.0080	.0708	.0885	-.1123	.0186	-.1085
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .022	P= .618	P= .046	P= .516	P= .688	P= .903	P= .275	P= .173	P= .083	P= .822	P= .096
BDW1	.1293	.0344	.0513	-.0971	.1282	.0010	.0515	-.0508	-.0542	.0302	.0162
	(235)	(234)	(234)	(234)	(233)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .048	P= .600	P= .435	P= .139	P= .051	P= .988	P= .432	P= .442	P= .408	P= .645	P= .805
BDW2	-.0569	-.0982	.0056	.0137	-.0332	-.0382	.0602	.0277	.0992	.0328	-.0237
	(234)	(234)	(234)	(234)	(233)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .000	P= .134	P= .935	P= .835	P= .618	P= .602	P= .359	P= .672	P= .129	P= .617	P= .717
BDW3	-.3560	-.1262	-.1908	.1938	-.2298	.0557	.0082	.0135	-.0167	-.0660	-.1350
	(234)	(233)	(233)	(233)	(232)	(234)	(234)	(234)	(234)	(234)	(234)
	P= .000	P= .054	P= .003	P= .003	P= .000	P= .397	P= .901	P= .837	P= .799	P= .316	P= .038
BDW4	-.2247	.0950	.0318	-.0103	.0101	-.0128	-.1353	.0081	-.0176	-.0177	.0687
	(234)	(233)	(233)	(233)	(232)	(234)	(234)	(234)	(234)	(234)	(234)
	P= .001	P= .148	P= .629	P= .876	P= .878	P= .851	P= .039	P= .902	P= .789	P= .788	P= .295

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	BOBS	BF	SF	LF	FDEC	L1	L3	L4	L5	L6	L8A
BOBS	1.0000	.0877	.0777	-.0968	.1181	.0395	-.0697	.0108	-.0361	.0514	.0279
	(235)	(238)	(238)	(238)	(233)	(235)	(235)	(235)	(235)	(235)	(235)
	P= .	P= .181	P= .236	P= .140	P= .072	P= .547	P= .287	P= .869	P= .582	P= .433	P= .671
BF	.0877	1.0000	-.2401	-.1113	.2634	-.0889	.0021	.1296	.0659	.0597	-.0054
	(238)	(238)	(238)	(238)	(236)	(238)	(238)	(238)	(238)	(238)	(238)
	P= .181	P= .	P= .000	P= .087	P= .000	P= .172	P= .974	P= .046	P= .311	P= .359	P= .934
SF	.0777	-.2401	1.0000	-.2558	.2533	.0092	.0732	.1518	-.0392	.0892	.0668
	(238)	(238)	(238)	(238)	(236)	(238)	(238)	(238)	(238)	(238)	(238)
	P= .236	P= .000	P= .	P= .000	P= .000	P= .888	P= .260	P= .019	P= .548	P= .170	P= .307
LF	-.0968	-.1113	-.2558	1.0000	-.2750	.0096	-.0231	-.1089	-.0326	-.2317	-.1270
	(238)	(238)	(238)	(238)	(236)	(238)	(238)	(238)	(238)	(238)	(238)
	P= .140	P= .087	P= .000	P= .	P= .000	P= .883	P= .723	P= .094	P= .617	P= .000	P= .050
FDEC	.1181	.2634	.2533	-.2750	1.0000	.0103	.0609	.2065	.0840	.1065	.1193
	(233)	(236)	(236)	(236)	(237)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .072	P= .000	P= .000	P= .000	P= .	P= .875	P= .350	P= .001	P= .197	P= .102	P= .067
L1	.0395	-.0889	.0092	.0096	.0103	1.0000	.0718	.0285	.0563	.1271	-.0889
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .547	P= .172	P= .888	P= .883	P= .875	P= .	P= .272	P= .706	P= .387	P= .050	P= .490
L3	-.0697	.0021	.0732	-.0231	.0609	.0718	1.0000	.0997	.0768	.0318	-.0780
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .287	P= .974	P= .260	P= .723	P= .350	P= .272	P= .	P= .124	P= .237	P= .629	P= .275
L4	.0108	.1296	.1518	-.1089	.2065	.0285	.0997	1.0000	.1085	.0549	.1823
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .869	P= .046	P= .019	P= .094	P= .001	P= .706	P= .124	P= .	P= .094	P= .398	P= .020
L5	-.0361	.0659	-.0392	-.0326	.0840	.0563	.0768	.1085	1.0000	.1739	.2021
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .582	P= .311	P= .548	P= .617	P= .197	P= .387	P= .237	P= .094	P= .	P= .007	P= .000
L6	.0514	.0597	.0892	-.2317	.1065	.1271	.0318	.0549	.1739	1.0000	.2349
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .433	P= .359	P= .170	P= .000	P= .102	P= .050	P= .629	P= .398	P= .007	P= .	P= .000
L8A	.0279	-.0054	.0668	-.1270	.1193	-.0889	-.0780	.1823	.2021	.2349	1.0000
	(235)	(238)	(238)	(238)	(237)	(239)	(239)	(239)	(239)	(239)	(239)
	P= .671	P= .934	P= .307	P= .050	P= .067	P= .490	P= .275	P= .020	P= .000	P= .000	P= .

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	L8B	L9	L10	L11	EC	IS	PL	CP	CSV	CRLS	PIL
SBE	.0406	.0205	.0513	.2752	.0215	.0527	.1947	.1875	.0247	.1098	.1688
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .532	P= .753	P= .430	P= .000	P= .741	P= .417	P= .003	P= .004	P= .704	P= .092	P= .009
P1	-.2058	-.1898	-.1788	-.1377	-.0648	-.3055	-.2285	-.2818	-.2326	-.2290	-.2981
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .001	P= .003	P= .007	P= .034	P= .320	P= .000	P= .000	P= .000	P= .000	P= .000	P= .000
P2	-.0923	-.1050	-.1161	-.1169	.0205	-.0781	-.1706	-.0901	-.1896	-.0749	-.1171
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .155	P= .105	P= .073	P= .072	P= .753	P= .229	P= .008	P= .166	P= .021	P= .249	P= .071
P3	.0380	.0808	.0903	.0921	.0187	.0695	.1399	.1031	.1290	.0308	.0958
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .559	P= .213	P= .164	P= .156	P= .775	P= .284	P= .031	P= .113	P= .046	P= .636	P= .142
P4	.1506	.1589	.0976	.0551	-.0032	.1250	.1126	.0675	.1228	.1099	.1381
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .020	P= .017	P= .133	P= .398	P= .960	P= .054	P= .083	P= .300	P= .058	P= .090	P= .039
P5	.0838	-.0012	.0607	.0739	-.0099	.1358	.1001	.1128	.0888	.1802	.1268
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .197	P= .986	P= .350	P= .256	P= .879	P= .036	P= .124	P= .082	P= .171	P= .030	P= .051
B1	-.0380	-.1221	-.1501	-.1863	.0030	-.1356	-.1953	-.1812	-.1618	-.1285	-.2188
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .559	P= .059	P= .020	P= .020	P= .968	P= .036	P= .002	P= .005	P= .012	P= .047	P= .001
B2	-.0848	.0032	-.0200	.0282	.0038	.0371	.0127	.0618	.0056	.0288	.0883
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .192	P= .960	P= .759	P= .666	P= .953	P= .568	P= .845	P= .344	P= .931	P= .658	P= .536
B3	.0483	.0813	.0969	.0635	-.0525	.0547	.1023	.0781	.0932	.0392	.0893
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .458	P= .525	P= .135	P= .330	P= .420	P= .400	P= .116	P= .255	P= .151	P= .547	P= .170
B4	.1221	.0566	.0582	.0536	.0586	.0515	.0487	.0291	.0391	.0680	.0691
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .060	P= .383	P= .370	P= .411	P= .368	P= .428	P= .454	P= .655	P= .547	P= .328	P= .288
SCY2	-.0882	-.2990	-.2026	-.0792	.0568	-.1299	-.2726	-.1332	-.2699	-.0667	-.1988
	(237)	(237)	(237)	(236)	(236)	(237)	(236)	(236)	(237)	(237)	(236)
	P= .499	P= .000	P= .002	P= .225	P= .385	P= .046	P= .000	P= .041	P= .000	P= .306	P= .002

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	L8B	L9	L10	L11	EC	TS	FL	CP	CSY	CBLS	PTL
SCT3	-.1019	-.0067	-.1025	-.0318	-.0168	-.0455	-.1058	.0267	-.0592	-.1671	-.0882
	(237)	(237)	(237)	(236)	(236)	(237)	(236)	(236)	(237)	(237)	(236)
	P= .118	P= .919	P= .116	P= .627	P= .802	P= .486	P= .106	P= .688	P= .365	P= .010	P= .197
SCT4	.0817	.1193	.0986	.0382	.0109	.0835	.1111	.0377	.1356	.1040	.1208
	(237)	(237)	(237)	(236)	(236)	(237)	(236)	(236)	(237)	(237)	(236)
	P= .523	P= .067	P= .130	P= .559	P= .868	P= .200	P= .089	P= .564	P= .037	P= .110	P= .064
SCT5	.1746	.2560	.2398	.1083	-.0223	.1614	.3370	.1273	.2529	.1966	.2455
	(237)	(237)	(237)	(236)	(236)	(237)	(236)	(236)	(237)	(237)	(236)
	P= .007	P= .000	P= .000	P= .097	P= .738	P= .013	P= .000	P= .051	P= .000	P= .002	P= .000
CBST4	.1365	.1164	.1071	.1225	.0070	.1670	.2038	.1533	.1718	.1384	.1731
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .035	P= .073	P= .099	P= .059	P= .915	P= .010	P= .002	P= .018	P= .008	P= .032	P= .007
CBST3	-.0396	-.0285	-.1130	-.0016	.0192	-.0768	-.0843	-.0445	-.1378	-.0655	-.0789
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .543	P= .706	P= .081	P= .981	P= .768	P= .237	P= .195	P= .498	P= .033	P= .313	P= .226
CBST2	-.1593	-.1107	.0128	-.1135	-.0690	-.1387	-.1837	-.1395	-.0580	-.1448	-.1490
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .014	P= .088	P= .844	P= .080	P= .289	P= .032	P= .027	P= .031	P= .372	P= .025	P= .021
SCL2	-.0729	-.2339	-.1638	-.0366	.0802	-.1222	-.2126	-.0717	-.1878	-.1167	-.1628
	(235)	(235)	(235)	(234)	(234)	(235)	(234)	(234)	(235)	(235)	(234)
	P= .266	P= .000	P= .012	P= .577	P= .141	P= .061	P= .001	P= .275	P= .004	P= .074	P= .013
SCL3	-.1838	-.2053	-.2023	-.0672	-.0718	-.0930	-.2370	-.0862	-.1893	-.1682	-.1929
	(235)	(235)	(235)	(234)	(234)	(235)	(234)	(234)	(235)	(235)	(234)
	P= .020	P= .002	P= .002	P= .306	P= .277	P= .155	P= .000	P= .313	P= .004	P= .012	P= .003
SCL4	.1046	.2473	.1169	-.0158	.0131	.1830	.1591	.0881	.2048	.1208	.1802
	(235)	(235)	(235)	(234)	(234)	(235)	(234)	(234)	(235)	(235)	(234)
	P= .110	P= .000	P= .074	P= .810	P= .842	P= .028	P= .015	P= .468	P= .002	P= .065	P= .032
SCL5	.1345	.1970	.2700	.1426	.0600	.1183	.3200	.1605	.2187	.1810	.2763
	(235)	(235)	(235)	(234)	(234)	(235)	(234)	(234)	(235)	(235)	(234)
	P= .039	P= .002	P= .000	P= .029	P= .361	P= .070	P= .000	P= .014	P= .001	P= .005	P= .000
CBSL4	.0995	.0870	.0664	-.0602	.0323	.1388	.0561	.0383	.1057	.0947	.0788
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .125	P= .180	P= .307	P= .355	P= .620	P= .032	P= .389	P= .598	P= .103	P= .148	P= .250

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	L8B	L9	L10	L11	EC	TS	FL	CP	CSF	CBLS	PTL
CBSL3	.0033	.0084	-.0388	.1232	-.0168	.0223	.0290	.1200	.0165	-.0526	.0438
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .959	P= .897	P= .597	P= .058	P= .797	P= .732	P= .656	P= .065	P= .800	P= .418	P= .505
CBSL2	-.1313	-.0920	-.0725	-.0786	-.0443	-.1533	-.1068	-.1649	-.1120	-.0482	-.1392
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .043	P= .156	P= .264	P= .227	P= .497	P= .018	P= .101	P= .011	P= .084	P= .459	P= .034
PUBL1	-.1532	-.2015	-.1466	-.0785	.0866	-.0829	-.1831	-.0357	-.1591	-.1488	-.1986
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .018	P= .000	P= .023	P= .252	P= .183	P= .202	P= .005	P= .583	P= .014	P= .022	P= .004
PUBL2	-.0639	-.0513	-.0409	-.0233	-.0797	-.0521	-.0816	-.0658	-.0864	-.0818	-.0865
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .325	P= .430	P= .529	P= .720	P= .220	P= .422	P= .210	P= .312	P= .183	P= .210	P= .184
PUBL3	.0858	.1348	.0339	.0530	-.0347	.1011	.1008	.0736	.1066	.1186	.1335
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .186	P= .037	P= .602	P= .415	P= .594	P= .119	P= .121	P= .258	P= .100	P= .077	P= .040
PUBL4	.0452	.0228	.0863	-.0006	.0780	-.0298	.0616	-.0088	.0440	.0219	.0334
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .487	P= .730	P= .183	P= .993	P= .255	P= .647	P= .344	P= .892	P= .498	P= .736	P= .610
PUBT2	-.0078	-.0017	-.0021	-.0585	.0221	-.0015	-.0362	-.0250	.0009	-.0060	-.0256
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .909	P= .979	P= .974	P= .403	P= .735	P= .982	P= .578	P= .701	P= .995	P= .926	P= .695
PUBT3	-.0239	.0084	-.0916	-.0213	-.1092	-.0697	-.1133	-.0925	-.0731	-.1189	-.0913
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .713	P= .897	P= .158	P= .744	P= .093	P= .283	P= .081	P= .155	P= .260	P= .066	P= .160
PUBT4	.0182	-.0128	.1025	.0989	.0926	.1109	.1893	.1676	.1128	.1585	.1771
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .780	P= .849	P= .114	P= .144	P= .154	P= .087	P= .021	P= .010	P= .082	P= .014	P= .006
RPIS2	-.1910	-.1779	-.2311	.0085	-.0369	-.2201	-.1838	-.1325	-.2687	-.2160	-.2809
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .003	P= .006	P= .000	P= .896	P= .571	P= .001	P= .005	P= .041	P= .000	P= .001	P= .000
RPIS3	.0872	-.0185	-.0070	-.0898	-.1149	.0229	-.0843	-.0318	.0185	-.0712	-.0301
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .467	P= .776	P= .914	P= .448	P= .077	P= .725	P= .195	P= .625	P= .776	P= .273	P= .648

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	L8B	L9	L10	L11	EC	TS	FL	CP	CSY	CRLS	PIL
BPI36	.1873	.1701	.1588	.0386	.1137	.1748	.2125	.1361	.1920	.2889	.2460
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .023	P= .008	P= .017	P= .556	P= .080	P= .007	P= .001	P= .036	P= .003	P= .000	P= .000
ACT1	.0299	.0898	.0477	.0906	-.0028	-.0488	.1041	.0082	.0095	.0875	.0369
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .645	P= .167	P= .463	P= .164	P= .965	P= .457	P= .109	P= .948	P= .884	P= .465	P= .571
ACT2	.0619	.1076	.1642	.0052	.0190	-.0298	.1530	.0014	.0888	.0661	.0821
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .340	P= .098	P= .011	P= .937	P= .771	P= .647	P= .018	P= .983	P= .895	P= .309	P= .207
ACT3	.0396	.1589	.0647	.0829	-.0768	.0679	.1558	.0645	.0952	.0988	.1275
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .542	P= .017	P= .319	P= .203	P= .238	P= .296	P= .016	P= .322	P= .142	P= .128	P= .049
ACT4	.0801	.0932	.0759	.0771	.0708	.0455	.1309	.0677	.0556	.1247	.1296
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .217	P= .151	P= .242	P= .236	P= .277	P= .484	P= .044	P= .299	P= .392	P= .054	P= .046
ACT5	.0017	.0139	-.0030	.0866	.0500	.0480	.0186	.1130	.0488	.0014	.0819
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .979	P= .831	P= .963	P= .183	P= .443	P= .460	P= .776	P= .082	P= .453	P= .983	P= .208
ACT6	-.0501	.1660	.1010	-.0305	.0232	-.1026	.1123	-.0338	.0385	-.0406	.0189
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .441	P= .010	P= .119	P= .639	P= .721	P= .114	P= .086	P= .609	P= .553	P= .534	P= .668
BOB1	-.0931	-.0097	.0058	.0690	.0278	-.0398	.0887	.0370	-.0397	-.0522	-.0064
	(235)	(235)	(235)	(234)	(234)	(235)	(234)	(234)	(235)	(235)	(234)
	P= .155	P= .882	P= .929	P= .294	P= .676	P= .548	P= .096	P= .573	P= .545	P= .426	P= .922
BOB2	.0681	-.1234	-.0188	-.1186	.0782	.0717	-.0926	.0125	-.0011	.0252	-.0159
	(235)	(235)	(235)	(234)	(234)	(235)	(234)	(234)	(235)	(235)	(234)
	P= .298	P= .059	P= .821	P= .070	P= .233	P= .274	P= .158	P= .849	P= .987	P= .701	P= .809
BOB3	-.1693	-.0690	-.0428	-.0639	.0169	-.1290	-.0709	-.0655	-.0591	-.0961	-.0884
	(234)	(234)	(234)	(233)	(233)	(234)	(233)	(233)	(234)	(234)	(233)
	P= .009	P= .293	P= .515	P= .331	P= .797	P= .049	P= .281	P= .319	P= .368	P= .143	P= .179
BOB4	.1371	.0199	.0169	.0369	-.1899	.0516	.0375	-.0284	.0235	.0822	.0186
	(234)	(234)	(234)	(233)	(233)	(234)	(233)	(233)	(234)	(234)	(233)
	P= .036	P= .762	P= .803	P= .575	P= .022	P= .432	P= .569	P= .688	P= .721	P= .388	P= .845

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	L88	L9	L10	L11	EC	TS	PL	CP	CSY	CRLS	PTL
BDBS	.0147	.1601	.0495	.0738	-.0057	.0137	.1149	.0163	.0593	.0398	.0724
	(235)	(235)	(235)	(234)	(234)	(235)	(234)	(234)	(235)	(235)	(234)
	P= .823	P= .014	P= .450	P= .261	P= .930	P= .835	P= .079	P= .805	P= .365	P= .544	P= .270
BF	-.0021	.0983	.1078	.0657	-.0805	.0498	.1488	.0842	.1096	.0155	.0910
	(238)	(238)	(238)	(237)	(237)	(238)	(237)	(237)	(238)	(238)	(237)
	P= .974	P= .147	P= .097	P= .314	P= .217	P= .448	P= .022	P= .196	P= .091	P= .812	P= .159
SF	.0603	.0640	.0919	.0847	.0519	.0584	.1848	.0797	.0659	.0889	.1057
	(238)	(238)	(238)	(237)	(237)	(238)	(237)	(237)	(238)	(238)	(237)
	P= .294	P= .326	P= .158	P= .194	P= .427	P= .403	P= .026	P= .222	P= .311	P= .172	P= .104
LF	-.1285	-.1143	-.1578	-.1116	-.0030	-.1760	-.1916	-.1582	-.1366	-.1828	-.1881
	(238)	(238)	(238)	(237)	(237)	(238)	(237)	(237)	(238)	(238)	(237)
	P= .048	P= .078	P= .015	P= .087	P= .963	P= .006	P= .003	P= .015	P= .035	P= .028	P= .004
FBEC	.1200	.2256	.2568	.1883	.0723	.1535	.3304	.1947	.2800	.2033	.3075
	(237)	(237)	(237)	(236)	(236)	(237)	(236)	(236)	(237)	(237)	(236)
	P= .065	P= .000	P= .000	P= .004	P= .269	P= .018	P= .000	P= .003	P= .000	P= .002	P= .000
L1	-.0245	-.0389	.1051	.0745	.6418	.0465	.0898	.1286	.0705	.3167	.2851
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .706	P= .550	P= .105	P= .252	P= .000	P= .474	P= .166	P= .048	P= .277	P= .000	P= .000
L3	.0021	-.0171	-.0394	.1589	.7106	.0241	.0903	.3979	.0348	.0224	.2078
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .974	P= .792	P= .545	P= .014	P= .000	P= .711	P= .165	P= .000	P= .593	P= .731	P= .001
L4	.1221	.1442	.1790	.1616	.1287	.1575	.4978	.1779	.2068	.5019	.3397
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .060	P= .026	P= .006	P= .013	P= .047	P= .015	P= .000	P= .006	P= .001	P= .000	P= .000
L5	.2180	.1867	.1231	.1821	.1415	.7089	.2322	.6649	.6219	.3094	.5808
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .001	P= .004	P= .057	P= .005	P= .029	P= .000	P= .000	P= .000	P= .000	P= .000	P= .000
L6	.1851	.2577	.2360	.2836	.0974	.5538	.3337	.5774	.3499	.2801	.5595
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .004	P= .000	P= .000	P= .000	P= .134	P= .000	P= .000	P= .000	P= .000	P= .000	P= .000
L8A	.6271	.1720	.1412	.1858	-.0558	.7523	.2519	.2963	.3179	.7588	.5290
	(239)	(239)	(239)	(238)	(238)	(239)	(238)	(238)	(239)	(239)	(238)
	P= .000	P= .008	P= .029	P= .004	P= .392	P= .000	P= .000	P= .000	P= .000	P= .000	P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	LBB	L9	L10	L11	EC	TS	PL	CP	CSY	CBLS	PTL
LBB	1.0000 (239) P= .	.1768 (239) P= .006	.1531 (239) P= .018	.1355 (238) P= .037	.0148 (238) P= .825	.6906 (239) P= .000	.2304 (238) P= .000	.2815 (238) P= .000	.2833 (239) P= .000	.7816 (239) P= .000	.8991 (238) P= .000
L9	.1768 (239) P= .006	1.0000 (239) P= .	.8053 (239) P= .000	.2185 (238) P= .001	-.0277 (238) P= .671	.2899 (239) P= .000	.7164 (238) P= .000	.2868 (238) P= .000	.7115 (239) P= .000	.1908 (239) P= .003	.5395 (238) P= .000
L10	.1531 (239) P= .018	.8053 (239) P= .000	1.0000 (239) P= .	.1810 (238) P= .030	.0259 (238) P= .691	.2338 (239) P= .000	.6795 (238) P= .000	.2115 (238) P= .001	.6958 (239) P= .000	.2386 (239) P= .000	.5356 (238) P= .000
L11	.1355 (238) P= .037	.2185 (238) P= .001	.1810 (238) P= .030	1.0000 (238) P= .	.1123 (237) P= .085	.2885 (238) P= .000	.6366 (238) P= .000	.7327 (238) P= .000	.2558 (238) P= .000	.2306 (238) P= .000	.5499 (238) P= .000
EC	.0148 (238) P= .825	-.0277 (238) P= .671	.0259 (238) P= .691	.1123 (237) P= .085	1.0000 (238) P= .	.0860 (238) P= .186	.0939 (237) P= .150	.3512 (237) P= .000	.0809 (238) P= .214	.2556 (238) P= .000	.2942 (237) P= .000
TS	.6906 (239) P= .000	.2899 (239) P= .000	.2338 (239) P= .000	.2885 (238) P= .000	.0860 (238) P= .186	1.0000 (239) P= .	.3815 (238) P= .000	.6917 (238) P= .000	.6154 (239) P= .000	.7326 (239) P= .000	.7848 (238) P= .000
PL	.2304 (238) P= .000	.7164 (238) P= .000	.6795 (238) P= .000	.6366 (238) P= .000	.0939 (237) P= .150	.3815 (238) P= .000	1.0000 (238) P= .	.5758 (238) P= .000	.7816 (238) P= .000	.8086 (238) P= .000	.7685 (238) P= .000
CP	.2815 (238) P= .000	.2868 (238) P= .000	.2115 (238) P= .001	.7327 (238) P= .000	.3512 (237) P= .000	.6917 (238) P= .000	.5758 (238) P= .000	1.0000 (238) P= .	.5679 (238) P= .000	.3716 (238) P= .000	.7899 (238) P= .000
CSY	.2833 (239) P= .000	.7115 (239) P= .000	.6958 (239) P= .000	.2558 (238) P= .000	.0809 (238) P= .214	.6154 (239) P= .000	.7816 (238) P= .000	.5679 (238) P= .000	1.0000 (239) P= .	.3870 (239) P= .000	.8139 (238) P= .000
CBLS	.7816 (239) P= .000	.1908 (239) P= .003	.2386 (239) P= .000	.2306 (238) P= .000	.2556 (238) P= .000	.7326 (239) P= .000	.8086 (238) P= .000	.3716 (238) P= .000	.3870 (239) P= .000	1.0000 (239) P= .	.7153 (238) P= .000
PTL	.8991 (238) P= .000	.5395 (238) P= .000	.5356 (238) P= .000	.5499 (238) P= .000	.2942 (237) P= .000	.7848 (238) P= .000	.7685 (238) P= .000	.7899 (238) P= .000	.8139 (238) P= .000	.7153 (238) P= .000	1.0000 (238) P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
SEX	-.0056 (239) P= .932	.0649 (239) P= .318	.0551 (239) P= .396	.1048 (239) P= .106	-.0168 (239) P= .796	-.0031 (239) P= .962	.0070 (239) P= .914	.2813 (239) P= .000	.1798 (238) P= .006	.0630 (238) P= .333	.1931 (237) P= .003
P1	-.0547 (239) P= .400	-.1808 (239) P= .029	-.0981 (239) P= .130	-.1597 (239) P= .013	-.0963 (239) P= .138	-.0326 (239) P= .616	.0350 (239) P= .590	-.0188 (239) P= .821	-.1307 (238) P= .044	-.0821 (238) P= .518	-.2006 (237) P= .002
P2	-.1668 (239) P= .010	-.0090 (239) P= .890	-.1240 (239) P= .056	-.0813 (239) P= .210	-.0828 (239) P= .202	-.1019 (239) P= .116	-.1029 (239) P= .112	-.1153 (239) P= .075	-.0922 (238) P= .156	-.0316 (238) P= .628	-.1182 (237) P= .069
P3	.0693 (239) P= .286	.0076 (239) P= .907	.1297 (239) P= .045	.0183 (239) P= .826	.0376 (239) P= .563	-.0479 (239) P= .461	.1020 (239) P= .113	.1686 (239) P= .009	.1134 (238) P= .081	-.0698 (238) P= .283	.0540 (237) P= .408
P4	.0957 (239) P= .140	.0760 (239) P= .242	.0615 (239) P= .344	.1298 (239) P= .045	.0454 (239) P= .485	.1795 (239) P= .005	-.0075 (239) P= .908	-.0531 (239) P= .414	.0212 (238) P= .745	.1150 (238) P= .077	.1375 (237) P= .034
P5	.0855 (239) P= .188	.0516 (239) P= .427	-.0206 (239) P= .752	.0178 (239) P= .788	.1398 (239) P= .031	-.0093 (239) P= .887	-.0446 (239) P= .492	-.0103 (239) P= .875	.0784 (238) P= .228	.0334 (238) P= .608	.0823 (237) P= .207
B1	-.1908 (239) P= .003	-.0306 (239) P= .638	-.0848 (239) P= .191	-.0555 (239) P= .393	-.1086 (239) P= .094	.0017 (239) P= .979	-.0301 (239) P= .643	.1419 (239) P= .028	-.1148 (238) P= .077	-.0225 (238) P= .730	-.1700 (237) P= .009
B2	-.0231 (239) P= .722	-.0461 (239) P= .478	-.0005 (239) P= .994	-.0213 (239) P= .743	-.0137 (239) P= .833	-.1256 (239) P= .052	-.0109 (239) P= .867	-.0190 (239) P= .771	.0199 (238) P= .760	-.0010 (238) P= .988	-.0080 (237) P= .903
B3	.0723 (239) P= .266	.0077 (239) P= .906	.0528 (239) P= .417	-.0460 (239) P= .479	.0155 (239) P= .811	.0390 (239) P= .548	.0796 (239) P= .220	-.0523 (239) P= .421	-.0070 (238) P= .918	-.0013 (238) P= .984	.1035 (237) P= .112
B4	.1793 (239) P= .005	.0752 (239) P= .247	.0718 (239) P= .271	.1598 (239) P= .013	.1226 (239) P= .058	.0818 (239) P= .210	-.0650 (239) P= .317	-.0708 (239) P= .276	.0873 (238) P= .179	.0757 (238) P= .245	.0326 (237) P= .616
SCY2	-.1373 (237) P= .035	-.0831 (237) P= .202	-.1265 (237) P= .052	-.2313 (237) P= .000	-.1555 (237) P= .017	-.0461 (237) P= .480	.0539 (237) P= .409	-.1806 (237) P= .005	-.0642 (236) P= .326	-.0271 (236) P= .679	-.1887 (235) P= .004

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
SCT3	-.1088	-.0058	-.1552	-.2403	-.1015	-.0691	-.0648	-.0958	-.2211	-.0138	-.1998
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(236)	(236)	(235)
	P= .095	P= .929	P= .017	P= .000	P= .119	P= .289	P= .295	P= .141	P= .001	P= .838	P= .002
SCT4	-.0089	-.0283	.1582	.1628	.0746	.0056	.0200	.0176	.1168	-.0281	.2178
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(236)	(236)	(235)
	P= .892	P= .710	P= .015	P= .012	P= .253	P= .931	P= .759	P= .787	P= .073	P= .668	P= .001
SCT5	.2418	.0973	.1906	.3006	.2306	.1428	.0242	.2213	.2328	.0918	.1936
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(236)	(236)	(235)
	P= .000	P= .135	P= .003	P= .000	P= .000	P= .028	P= .711	P= .001	P= .000	P= .160	P= .003
CBST4	.0145	.0622	.1387	.1253	.1368	.0734	-.0949	.2370	.2057	.1042	.1637
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .824	P= .338	P= .037	P= .053	P= .035	P= .258	P= .161	P= .000	P= .001	P= .109	P= .012
CBST3	-.0515	-.0675	-.0833	-.0990	-.0615	-.0773	.0576	-.0877	-.1153	-.0191	-.0628
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .428	P= .299	P= .199	P= .127	P= .344	P= .234	P= .376	P= .176	P= .076	P= .769	P= .339
CBST2	.0049	.0137	-.1226	-.0136	-.0352	-.0450	-.0113	-.1048	-.0839	-.0505	-.0788
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .939	P= .833	P= .058	P= .835	P= .588	P= .489	P= .862	P= .106	P= .197	P= .438	P= .227
SCL2	-.0301	-.0215	-.1406	-.0918	-.2166	-.0495	-.0603	-.0925	-.0221	.0578	-.1370
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(234)	(233)
	P= .646	P= .743	P= .031	P= .161	P= .001	P= .450	P= .357	P= .158	P= .737	P= .379	P= .037
SCL3	-.1805	-.0798	-.1477	-.2868	-.0451	-.0703	.0120	-.1435	-.1669	-.0816	-.1897
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(234)	(233)
	P= .006	P= .223	P= .024	P= .000	P= .492	P= .283	P= .855	P= .028	P= .011	P= .526	P= .022
SCL4	.0710	.0566	.1363	.1717	.1127	.0009	.0172	.0792	.0606	-.0886	.1337
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(234)	(233)
	P= .278	P= .388	P= .037	P= .008	P= .085	P= .989	P= .793	P= .226	P= .356	P= .460	P= .041
SCL5	.1548	.1176	.1504	.2557	.1382	.1556	-.0299	.1570	.2440	.1218	.1948
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(234)	(233)
	P= .018	P= .072	P= .021	P= .000	P= .034	P= .017	P= .648	P= .016	P= .000	P= .064	P= .003
CBSL4	.0057	.0878	.0498	.2013	.0206	-.0361	-.0846	.1819	.1758	.0306	.0708
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .930	P= .176	P= .443	P= .002	P= .751	P= .579	P= .167	P= .028	P= .007	P= .638	P= .278

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	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
CHSL3	-.0101	-.0113	-.0355	-.1152	-.0060	.0535	.0635	-.0600	-.1125	-.0330	-.0722
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .876	P= .862	P= .585	P= .075	P= .926	P= .410	P= .328	P= .356	P= .083	P= .613	P= .268
CHSL2	.0053	-.0870	-.0602	-.0691	-.0284	-.0600	.0812	-.0335	-.0490	.0034	-.0367
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .936	P= .180	P= .358	P= .287	P= .662	P= .356	P= .526	P= .606	P= .452	P= .958	P= .574
PUBL1	-.1399	-.1018	-.0670	-.0932	-.0458	-.0093	.0579	-.0886	-.1068	-.0409	-.0376
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .031	P= .118	P= .302	P= .151	P= .481	P= .887	P= .373	P= .858	P= .100	P= .530	P= .568
PUBL2	.0822	-.1240	-.0098	-.0132	-.0163	-.0971	-.0822	.0046	-.0375	.0843	.0269
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .517	P= .056	P= .885	P= .839	P= .805	P= .135	P= .206	P= .943	P= .565	P= .195	P= .650
PUBL3	.0538	.0698	.0023	.0464	.0631	-.0306	.0501	.0157	-.0235	-.0498	-.0582
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .408	P= .285	P= .972	P= .476	P= .331	P= .638	P= .441	P= .810	P= .718	P= .448	P= .373
PUBL4	-.0270	.0951	.0476	.0095	-.0388	.1429	-.0192	.0046	.1352	.0056	.0711
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .678	P= .143	P= .464	P= .884	P= .550	P= .027	P= .767	P= .943	P= .037	P= .931	P= .276
PUBT2	.0425	.0752	-.0300	-.0015	.0414	.0340	-.0650	.0130	.0333	-.0866	-.1131
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .513	P= .247	P= .645	P= .982	P= .528	P= .601	P= .317	P= .842	P= .609	P= .183	P= .084
PUBT3	.0590	-.0113	-.0142	-.1152	-.0743	-.0663	-.0308	-.1129	-.1125	.0690	.0016
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .364	P= .862	P= .827	P= .075	P= .253	P= .307	P= .636	P= .082	P= .083	P= .284	P= .980
PUBT4	-.0859	-.0296	.0408	.1076	.0564	.0601	.0847	.1047	.1200	.0284	.0710
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .185	P= .649	P= .530	P= .097	P= .386	P= .355	P= .192	P= .106	P= .064	P= .708	P= .276
EPIS2	-.1048	-.1755	-.1154	-.0252	-.0718	-.0481	-.0133	-.1676	-.1189	-.1570	-.1461
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .107	P= .007	P= .075	P= .699	P= .271	P= .460	P= .838	P= .009	P= .067	P= .015	P= .024
EPIS3	-.0200	.0865	-.0796	-.2056	-.0355	-.1036	.0180	.0230	-.0199	.0510	-.0417
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .759	P= .183	P= .220	P= .001	P= .585	P= .110	P= .782	P= .724	P= .760	P= .436	P= .523

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	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
EPIS0	.0979	.0522	.1697	.1979	.1179	.1708	-.0411	.0898	.1326	.0374	.1702
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .131	P= .422	P= .009	P= .002	P= .069	P= .008	P= .527	P= .167	P= .041	P= .566	P= .009
ACT1	.0610	.1068	.0786	-.0010	.0438	-.0185	-.0464	.0776	.0210	-.0949	-.0283
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .348	P= .100	P= .226	P= .987	P= .505	P= .824	P= .475	P= .232	P= .747	P= .144	P= .719
ACT2	.0591	.1042	-.0156	.1560	.0155	.1757	-.0745	.0255	.1347	-.0495	.0606
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .363	P= .108	P= .811	P= .016	P= .811	P= .006	P= .251	P= .695	P= .038	P= .448	P= .353
ACT3	.1498	.0938	.0881	.1313	-.0175	.0759	-.0830	.0476	.0999	-.0481	.0932
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .021	P= .148	P= .195	P= .043	P= .788	P= .242	P= .201	P= .463	P= .124	P= .458	P= .153
ACT4	-.0038	.0251	.0852	.1163	.0275	.1863	-.0701	-.0220	.0583	-.0599	.1967
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .958	P= .699	P= .487	P= .073	P= .673	P= .004	P= .281	P= .735	P= .404	P= .357	P= .002
ACT5	.0998	.0929	.1061	-.0245	.0297	.1416	-.0786	.1025	.1031	.0892	.0895
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .125	P= .152	P= .102	P= .707	P= .648	P= .029	P= .226	P= .114	P= .113	P= .170	P= .170
ACT6	.0683	.0750	.1412	.1420	.0019	.0852	-.0758	-.0155	-.0281	-.0620	.0160
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .293	P= .248	P= .029	P= .028	P= .976	P= .190	P= .243	P= .811	P= .712	P= .341	P= .806
BOB1	-.0302	.0236	-.0495	-.0336	-.1158	-.0712	.1549	-.0879	-.0525	.0843	.0554
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(234)	(233)
	P= .645	P= .718	P= .450	P= .608	P= .076	P= .277	P= .017	P= .465	P= .424	P= .199	P= .400
BOB2	.0017	-.0334	.0818	-.0026	.0622	-.0016	-.0512	.0471	.0388	.1067	-.0689
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(234)	(233)
	P= .979	P= .610	P= .211	P= .968	P= .342	P= .980	P= .435	P= .472	P= .555	P= .104	P= .295
BOB3	-.0319	-.1669	-.1303	-.0365	-.0608	-.0894	-.0748	-.0925	-.1189	-.0828	-.1352
	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(233)	(233)	(232)
	P= .627	P= .011	P= .046	P= .578	P= .358	P= .173	P= .254	P= .159	P= .070	P= .208	P= .040
BOB4	-.0128	.0674	.0146	-.0298	.0038	-.0094	-.0838	.0610	.0398	-.1078	-.0066
	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(234)	(233)	(233)	(234)
	P= .851	P= .304	P= .825	P= .650	P= .958	P= .887	P= .202	P= .353	P= .545	P= .101	P= .921

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	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
BONS	.0885	.1046	.1329	.1156	.1368	.2016	.0455	.0208	.1025	-.0222	.1605
	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(235)	(234)	(234)	(233)
	P= .177	P= .110	P= .042	P= .077	P= .037	P= .002	P= .488	P= .751	P= .118	P= .735	P= .014
BF	.0271	.0438	.1482	.1457	.0540	.0756	.0068	-.0067	.1159	.0743	.0628
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)	(237)	(236)
	P= .678	P= .501	P= .026	P= .025	P= .407	P= .246	P= .917	P= .918	P= .075	P= .255	P= .337
SF	-.0675	.0455	.0821	.0518	-.0731	.0462	.0367	.1371	.0848	-.0192	.1268
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)	(237)	(236)
	P= .300	P= .485	P= .518	P= .430	P= .261	P= .478	P= .573	P= .035	P= .195	P= .769	P= .054
LF	-.0438	-.0709	-.0689	-.2222	-.0789	-.0485	-.0580	-.1052	-.1807	-.0752	-.2058
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)	(237)	(236)
	P= .505	P= .276	P= .289	P= .001	P= .225	P= .494	P= .373	P= .105	P= .005	P= .249	P= .001
FDEC	.0987	.1373	.0812	.1759	.0966	.0833	.1172	.0913	.2721	.0883	.1723
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(236)	(236)	(235)
	P= .130	P= .035	P= .213	P= .007	P= .138	P= .201	P= .072	P= .161	P= .000	P= .176	P= .008
L1	-.0855	.0504	-.0722	.0195	.0087	.0788	.0846	.0103	-.0784	-.0334	-.0024
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .188	P= .438	P= .266	P= .765	P= .894	P= .252	P= .492	P= .875	P= .228	P= .608	P= .971
L3	-.0821	.0098	-.0215	-.0305	-.0318	.0326	.0531	-.0512	.0169	-.0054	.0878
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .517	P= .886	P= .741	P= .639	P= .629	P= .616	P= .414	P= .431	P= .796	P= .934	P= .467
L4	.0972	.0381	.1052	.1807	.0148	.0818	-.0650	.1805	.1952	.1028	.1783
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .138	P= .558	P= .105	P= .004	P= .825	P= .210	P= .317	P= .005	P= .002	P= .114	P= .006
L5	.0178	.0319	.1987	.0629	.1228	.1159	-.0292	.0569	.2805	.0882	.1558
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .789	P= .623	P= .002	P= .333	P= .058	P= .074	P= .656	P= .381	P= .000	P= .175	P= .016
L6	.0613	.0758	.1536	.2382	.1316	.1198	.0026	.0484	.0853	.0986	.0897
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .345	P= .243	P= .017	P= .000	P= .042	P= .064	P= .968	P= .495	P= .190	P= .129	P= .169
L8A	.0049	-.0087	.1601	.1458	.0945	-.0828	.0092	.0653	.1443	.1103	.1918
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .940	P= .893	P= .013	P= .025	P= .145	P= .510	P= .888	P= .315	P= .026	P= .090	P= .003

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	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
LBB	.1217	.1477	.1652	.1358	.1479	.0135	-.0097	.1267	.1016	-.0216	.1714
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .060	P= .022	P= .011	P= .036	P= .022	P= .835	P= .882	P= .050	P= .118	P= .740	P= .008
L9	.1368	.1431	.1787	.3026	.2125	.1416	.0228	.0836	.1761	.1075	.2210
	(239)	(239)	(239)	(235)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .035	P= .027	P= .007	P= .000	P= .001	P= .029	P= .730	P= .198	P= .006	P= .098	P= .001
L10	.1222	.0796	.1368	.2325	.1103	.0760	.0959	.1302	.1245	.1799	.2101
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .059	P= .220	P= .035	P= .000	P= .089	P= .242	P= .142	P= .044	P= .055	P= .005	P= .001
L11	.0922	.1419	.1000	.2023	.0938	.0979	.0141	-.0313	.1953	.1041	.2287
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)	(237)	(236)
	P= .156	P= .029	P= .124	P= .002	P= .149	P= .132	P= .828	P= .631	P= .003	P= .110	P= .000
EC	-.1000	.0003	-.0720	-.0382	-.0163	.1169	.0701	.0221	-.0136	.0023	.0407
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)	(237)	(236)
	P= .124	P= .997	P= .269	P= .600	P= .806	P= .072	P= .282	P= .734	P= .835	P= .972	P= .533
TS	.0679	.0830	.2517	.2018	.1818	.0856	-.0131	.1038	.2459	.1071	.2246
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .296	P= .201	P= .000	P= .002	P= .005	P= .187	P= .840	P= .109	P= .000	P= .099	P= .000
FL	.1746	.1557	.2023	.3634	.1866	.1562	.0357	.1241	.2735	.1858	.3292
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)	(237)	(236)
	P= .007	P= .016	P= .002	P= .000	P= .004	P= .016	P= .584	P= .056	P= .000	P= .004	P= .000
CP	.0578	.1175	.1961	.2026	.1465	.1540	.0065	.0185	.2729	.1332	.2363
	(238)	(238)	(236)	(238)	(238)	(238)	(238)	(238)	(237)	(237)	(236)
	P= .378	P= .070	P= .002	P= .002	P= .024	P= .017	P= .921	P= .777	P= .003	P= .041	P= .000
CSV	.1443	.1225	.2287	.2873	.1842	.1608	.0518	.1339	.2686	.1736	.2878
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .026	P= .059	P= .000	P= .000	P= .004	P= .013	P= .426	P= .039	P= .000	P= .007	P= .000
CBLS	.0877	.1048	.1478	.1866	.0981	.0495	-.0079	.1595	.1882	.0923	.2218
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .177	P= .106	P= .022	P= .004	P= .130	P= .446	P= .906	P= .014	P= .022	P= .156	P= .001
PTL	.1871	.1758	.2179	.3018	.1684	.1538	.0359	.1173	.2557	.1778	.3078
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)	(237)	(236)
	P= .023	P= .007	P= .001	P= .000	P= .009	P= .018	P= .581	P= .071	P= .000	P= .006	P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
B1	1.0000	.4472	.1699	.2335	.1540	.0759	-.0357	.1008	.0656	.0763	.1489
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .	P= .000	P= .008	P= .000	P= .017	P= .242	P= .583	P= .120	P= .313	P= .241	P= .022
B2	.4472	1.0000	.1084	.1059	.1069	.0920	-.1133	.1089	.0484	.0156	-.0061
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .000	P= .	P= .095	P= .102	P= .099	P= .156	P= .081	P= .093	P= .458	P= .810	P= .926
B3	.1699	.1084	1.0000	.1810	.2576	.0792	.0921	.0195	.1667	.0991	.1484
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .008	P= .095	P= .	P= .005	P= .000	P= .223	P= .156	P= .764	P= .010	P= .128	P= .026
B4	.2335	.1059	.1810	1.0000	.1722	.1613	-.0008	.1510	.1852	.0506	.2578
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .000	P= .102	P= .005	P= .	P= .008	P= .013	P= .990	P= .020	P= .004	P= .437	P= .000
B5	.1540	.1069	.2576	.1722	1.0000	.1581	.0725	-.0278	.1626	.0060	.1323
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .017	P= .099	P= .000	P= .008	P= .	P= .014	P= .264	P= .669	P= .012	P= .927	P= .042
B6	.0759	.0920	.0792	.1613	.1581	1.0000	-.0578	.0812	.1152	.0158	.0499
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .242	P= .156	P= .223	P= .013	P= .014	P= .	P= .376	P= .211	P= .076	P= .809	P= .445
B7	-.0357	-.1133	.0921	-.0008	.0725	-.0578	1.0000	-.0526	.0357	-.0173	-.0757
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .583	P= .081	P= .156	P= .990	P= .264	P= .376	P= .	P= .418	P= .583	P= .790	P= .245
B8	.1008	.1089	.0195	.1510	-.0278	.0812	-.0526	1.0000	.1319	.0523	.1358
	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(239)	(238)	(238)	(237)
	P= .120	P= .093	P= .764	P= .020	P= .669	P= .211	P= .418	P= .	P= .042	P= .422	P= .037
B9	.0656	.0484	.1667	.1852	.1626	.1152	.0357	.1319	1.0000	.1552	.2799
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)
	P= .313	P= .458	P= .010	P= .004	P= .012	P= .076	P= .583	P= .042	P= .	P= .017	P= .000
B10	.0763	.0156	.0991	.0506	.0060	.0158	-.0173	.0523	.1552	1.0000	.2245
	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(238)	(237)
	P= .241	P= .810	P= .128	P= .437	P= .927	P= .809	P= .790	P= .422	P= .017	P= .	P= .000
B11	.1489	-.0061	.1484	.2578	.1323	.0499	-.0757	.1358	.2799	.2245	1.0000
	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)	(237)
	P= .022	P= .926	P= .026	P= .000	P= .042	P= .445	P= .245	P= .037	P= .000	P= .000	P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A	B18B	B19A
SEX	.1062 (237) P= .103	-.0232 (239) P= .721	.2284 (239) P= .000	.2183 (239) P= .001	.2887 (239) P= .000	-.0828 (238) P= .203	.1843 (239) P= .026	-.0614 (238) P= .346	.1717 (238) P= .008	.1397 (238) P= .031	-.1025 (238) P= .115
P1	-.1488 (237) P= .026	.0171 (239) P= .792	-.1811 (239) P= .005	.0178 (239) P= .784	-.0590 (239) P= .364	-.0482 (238) P= .459	-.1425 (239) P= .028	-.0255 (238) P= .696	-.0084 (238) P= .897	.0012 (238) P= .986	-.2821 (238) P= .000
P2	-.1018 (237) P= .118	-.1183 (239) P= .068	-.1089 (239) P= .093	-.0220 (239) P= .735	-.0271 (239) P= .677	-.1486 (238) P= .022	-.1682 (239) P= .009	.0025 (238) P= .969	-.0725 (238) P= .266	-.0462 (238) P= .479	-.0356 (238) P= .584
P3	.0073 (237) P= .911	.0333 (239) P= .608	.0350 (239) P= .591	.0212 (239) P= .744	.0267 (239) P= .681	.0329 (238) P= .614	.0878 (239) P= .176	-.0967 (238) P= .137	-.0230 (238) P= .724	-.0634 (238) P= .330	.0395 (238) P= .548
P4	.1315 (237) P= .043	.1056 (239) P= .104	.1439 (239) P= .026	-.0063 (239) P= .923	.0381 (239) P= .600	.1208 (238) P= .063	.1541 (239) P= .017	.1131 (238) P= .082	.0808 (238) P= .214	.1461 (238) P= .024	.1362 (238) P= .036
P5	.0564 (237) P= .388	-.0164 (239) P= .801	.1070 (239) P= .099	.0248 (239) P= .703	.0283 (239) P= .709	.0816 (238) P= .210	.0074 (239) P= .909	.0337 (238) P= .605	.0662 (238) P= .309	-.0578 (238) P= .375	.0330 (238) P= .612
B1	.0009 (237) P= .989	.0396 (239) P= .543	-.1502 (239) P= .020	-.0597 (239) P= .358	-.0863 (239) P= .184	.0230 (238) P= .724	-.1031 (239) P= .112	-.0776 (238) P= .233	-.0689 (238) P= .290	-.1161 (238) P= .074	-.0826 (238) P= .204
B2	-.1080 (237) P= .097	-.0378 (239) P= .561	.0377 (239) P= .562	.1880 (239) P= .004	.1475 (239) P= .023	-.0705 (238) P= .278	-.0748 (239) P= .249	-.0619 (238) P= .342	.0646 (238) P= .321	.0989 (238) P= .128	-.0275 (238) P= .673
B3	.0631 (237) P= .333	.0289 (239) P= .701	.0925 (239) P= .154	-.1205 (239) P= .063	-.0684 (239) P= .293	-.0098 (238) P= .881	.0706 (239) P= .276	.0129 (238) P= .843	.0830 (238) P= .509	.0283 (238) P= .709	.0246 (238) P= .706
B4	.0537 (237) P= .411	-.0238 (239) P= .714	-.0177 (239) P= .786	.0200 (239) P= .758	.0187 (239) P= .774	.0606 (238) P= .352	.1258 (239) P= .052	.1357 (238) P= .036	-.0958 (238) P= .141	-.0249 (238) P= .702	.0893 (238) P= .170
SCT2	-.2247 (235) P= .001	-.1199 (237) P= .065	-.2888 (237) P= .000	-.0748 (237) P= .251	-.0820 (237) P= .208	-.2737 (236) P= .000	-.2538 (237) P= .000	.0013 (236) P= .984	-.0169 (236) P= .796	.0596 (236) P= .362	-.1937 (236) P= .003

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A	B18B	B19A
SCT3	-.0632	.0497	.0285	.0040	-.0058	.0069	-.2230	.0554	.0233	.0890	-.0328
	(235)	(237)	(237)	(237)	(237)	(236)	(237)	(236)	(236)	(236)	(236)
	P= .338	P= .447	P= .708	P= .952	P= .929	P= .916	P= .001	P= .397	P= .722	P= .454	P= .621
SCT4	.1508	.0587	.0754	-.0792	-.0831	-.0036	.1427	.0813	-.0186	-.1284	.1084
	(235)	(237)	(237)	(237)	(237)	(236)	(237)	(236)	(236)	(236)	(236)
	P= .021	P= .368	P= .247	P= .224	P= .203	P= .957	P= .028	P= .213	P= .779	P= .049	P= .097
SCT5	.1835	.0279	.1723	.1363	.1848	.3108	.3384	-.1620	.0450	.0656	.1126
	(235)	(237)	(237)	(237)	(237)	(236)	(237)	(236)	(236)	(236)	(236)
	P= .005	P= .670	P= .008	P= .036	P= .004	P= .000	P= .000	P= .013	P= .491	P= .315	P= .084
CHST4	.0993	.0222	.0886	.0958	.1701	.0989	.1776	-.0618	.0968	.0696	.0522
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .127	P= .733	P= .172	P= .141	P= .008	P= .128	P= .006	P= .346	P= .138	P= .285	P= .423
CHST3	-.0205	-.1003	.0301	-.0477	-.0886	.0028	-.1083	.0672	-.0747	-.1039	.0079
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .756	P= .122	P= .643	P= .463	P= .172	P= .966	P= .095	P= .302	P= .251	P= .110	P= .903
CHST2	-.0260	.0919	-.1659	-.0750	-.1085	-.1568	-.0943	.0464	.0213	.0568	-.0629
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .690	P= .157	P= .010	P= .248	P= .098	P= .015	P= .146	P= .476	P= .743	P= .383	P= .334
SCL2	-.1958	.0406	-.1686	.0622	-.0827	-.0790	-.1910	.0377	-.0438	-.0762	-.1128
	(233)	(235)	(235)	(235)	(235)	(234)	(235)	(234)	(234)	(234)	(234)
	P= .003	P= .536	P= .010	P= .342	P= .207	P= .228	P= .003	P= .567	P= .505	P= .246	P= .085
SCL3	-.1748	-.0853	-.1768	.0225	-.0481	-.2662	-.1830	-.0483	.0085	.0196	-.1385
	(233)	(235)	(235)	(235)	(235)	(234)	(235)	(234)	(234)	(234)	(234)
	P= .008	P= .192	P= .007	P= .732	P= .501	P= .000	P= .005	P= .500	P= .898	P= .765	P= .040
SCL4	.1550	.1005	.1992	-.1016	.0098	.1835	.0888	.1097	.0123	-.0528	.1419
	(233)	(235)	(235)	(235)	(235)	(234)	(235)	(234)	(234)	(234)	(234)
	P= .018	P= .125	P= .002	P= .120	P= .882	P= .028	P= .175	P= .094	P= .851	P= .422	P= .030
SCL5	.2311	.0173	.1607	.0407	.0655	.2768	.3019	-.1469	-.0151	.0265	.1396
	(233)	(235)	(235)	(235)	(235)	(234)	(235)	(234)	(234)	(234)	(234)
	P= .000	P= .792	P= .014	P= .535	P= .318	P= .000	P= .000	P= .025	P= .819	P= .686	P= .033
CHSL4	.0767	-.0032	.0456	-.0725	-.0065	.1621	.1030	-.0545	-.0471	-.1161	.0815
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .240	P= .960	P= .483	P= .264	P= .920	P= .012	P= .112	P= .402	P= .470	P= .074	P= .211

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A	B18B	B19A
CHBL3	.0038 (237) P= .966	.1248 (239) P= .055	.0829 (239) P= .201	-.0032 (239) P= .960	-.0096 (239) P= .882	-.0881 (238) P= .176	-.0766 (239) P= .238	-.0012 (238) P= .985	-.0636 (238) P= .329	.0173 (238) P= .790	.0505 (238) P= .436
CHBL2	-.1266 (237) P= .052	-.0258 (239) P= .696	-.1572 (239) P= .015	.0608 (239) P= .350	-.0061 (239) P= .926	-.0950 (238) P= .144	-.0986 (239) P= .128	.0537 (238) P= .410	.0885 (238) P= .173	-.0091 (238) P= .888	-.1417 (238) P= .029
FOBL1	.0173 (237) P= .791	.0578 (239) P= .377	-.0518 (239) P= .425	.0288 (239) P= .703	.0283 (239) P= .709	-.2380 (238) P= .000	-.0320 (239) P= .622	.0337 (238) P= .605	-.0846 (238) P= .194	.0236 (238) P= .717	-.1366 (238) P= .035
FOBL2	.0079 (237) P= .904	-.0075 (239) P= .908	.0752 (239) P= .247	.0321 (239) P= .622	.0306 (239) P= .638	-.0705 (238) P= .279	-.0388 (239) P= .549	.0376 (238) P= .563	-.0801 (238) P= .539	-.0565 (238) P= .386	-.0086 (238) P= .895
FOBL3	-.0872 (237) P= .181	.0363 (239) P= .577	-.0628 (239) P= .337	.1151 (239) P= .076	.0598 (239) P= .357	.0879 (238) P= .177	-.0981 (239) P= .131	-.0360 (238) P= .581	.0477 (238) P= .466	-.0392 (238) P= .548	.0009 (238) P= .989
FOBL4	.0967 (237) P= .138	-.0758 (239) P= .245	.0386 (239) P= .553	-.1985 (239) P= .002	-.1241 (239) P= .055	.1012 (238) P= .120	.1833 (239) P= .004	-.0110 (238) P= .865	.0298 (238) P= .652	.0938 (238) P= .151	.0922 (238) P= .156
FOBT2	-.1856 (237) P= .025	-.0238 (239) P= .718	-.0032 (239) P= .961	-.0888 (239) P= .495	-.0187 (239) P= .821	.0229 (238) P= .725	-.0179 (239) P= .783	.1068 (238) P= .100	-.0683 (238) P= .298	.0388 (238) P= .598	-.0758 (238) P= .246
FOBT3	-.0872 (237) P= .181	.0057 (239) P= .930	-.1270 (239) P= .050	.0378 (239) P= .565	-.0096 (239) P= .882	.0228 (238) P= .731	-.0586 (239) P= .369	.0170 (238) P= .794	-.0115 (238) P= .860	-.0951 (238) P= .144	-.0277 (238) P= .671
FOBT4	.1681 (237) P= .010	-.0043 (239) P= .947	.1577 (239) P= .015	-.0178 (239) P= .789	.0256 (239) P= .694	-.0246 (238) P= .706	.1092 (239) P= .092	-.0861 (238) P= .186	.0520 (238) P= .425	.0883 (238) P= .176	.0682 (238) P= .295
HPIS2	-.3147 (237) P= .000	.0019 (239) P= .977	-.2587 (239) P= .000	.0123 (239) P= .851	-.0188 (239) P= .825	-.1871 (238) P= .023	-.1102 (239) P= .089	.0127 (238) P= .846	-.0842 (238) P= .196	-.1015 (238) P= .118	-.1295 (238) P= .046
HPIS3	.0341 (237) P= .601	.0208 (239) P= .749	.1023 (239) P= .115	.0566 (239) P= .384	.0525 (239) P= .419	-.0681 (238) P= .296	-.1296 (239) P= .045	.0093 (238) P= .887	.0075 (238) P= .908	.0780 (238) P= .230	-.0507 (238) P= .437

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A	B18B	B19A
BPIBO	.1560 (237) P= .016	-.0050 (239) P= .939	.0880 (239) P= .176	-.0118 (239) P= .856	.0117 (239) P= .857	.2355 (238) P= .000	.1568 (239) P= .015	-.0155 (238) P= .812	.0917 (238) P= .158	-.0228 (238) P= .727	.1704 (238) P= .008
ACT1	.0673 (237) P= .302	-.0088 (239) P= .892	.0611 (239) P= .347	.0274 (239) P= .673	.0542 (239) P= .408	-.0250 (238) P= .702	.0576 (239) P= .375	.0203 (238) P= .756	.0892 (238) P= .450	.0971 (238) P= .135	.0365 (238) P= .550
ACT2	.0882 (237) P= .176	.0604 (239) P= .353	.0962 (239) P= .138	.0927 (239) P= .153	.1483 (239) P= .022	.1648 (238) P= .011	.0943 (239) P= .146	-.0180 (238) P= .830	.0666 (238) P= .306	.0106 (238) P= .871	.1123 (238) P= .084
ACT3	.1484 (237) P= .022	.0498 (239) P= .443	.1706 (239) P= .006	-.0187 (239) P= .774	.0768 (239) P= .237	.0155 (238) P= .812	.1595 (239) P= .014	.0672 (238) P= .302	-.0747 (238) P= .251	.0092 (238) P= .888	.0603 (238) P= .356
ACT4	.1780 (237) P= .007	.1458 (239) P= .024	.1847 (239) P= .004	-.0378 (239) P= .565	.0071 (239) P= .913	.0352 (238) P= .589	.1503 (239) P= .017	.1049 (238) P= .106	.0255 (238) P= .696	.0453 (238) P= .486	.0468 (238) P= .477
ACT5	.1043 (237) P= .109	.1207 (239) P= .062	.1336 (239) P= .039	.0558 (239) P= .394	.0406 (239) P= .533	.0256 (238) P= .694	.0288 (239) P= .658	-.0135 (238) P= .836	.1197 (238) P= .065	.1198 (238) P= .065	.0865 (238) P= .184
ACT6	.0411 (237) P= .529	-.0315 (239) P= .628	.0809 (239) P= .529	-.0352 (239) P= .588	-.0263 (239) P= .685	.0667 (238) P= .305	.0757 (239) P= .244	-.0221 (238) P= .735	.1049 (238) P= .106	.0604 (238) P= .358	.0052 (238) P= .936
BOH1	-.0905 (233) P= .169	-.1060 (235) P= .105	.0093 (235) P= .887	-.0218 (235) P= .745	-.0396 (235) P= .545	-.0185 (234) P= .779	-.0836 (235) P= .506	-.0836 (235) P= .506	.1116 (235) P= .088	-.0211 (235) P= .747	-.0551 (234) P= .401
BOH2	-.0947 (233) P= .149	.0898 (235) P= .170	-.0291 (235) P= .658	.0353 (235) P= .591	.0009 (235) P= .989	-.0398 (234) P= .545	-.0892 (235) P= .453	-.0258 (235) P= .694	-.1318 (235) P= .044	.1035 (235) P= .114	-.0436 (234) P= .507
BOH3	-.0590 (232) P= .371	.0497 (234) P= .449	-.1812 (234) P= .031	-.0489 (234) P= .456	-.0871 (234) P= .188	-.0138 (233) P= .834	-.1055 (234) P= .108	.0535 (234) P= .415	-.0127 (234) P= .847	-.0839 (234) P= .504	-.0168 (233) P= .798
BOH4	.0379 (232) P= .565	.0654 (234) P= .320	.0305 (234) P= .643	.0686 (234) P= .296	.0918 (234) P= .163	-.0239 (233) P= .717	.0177 (234) P= .788	.0096 (234) P= .883	-.0844 (234) P= .500	-.0203 (234) P= .757	.0548 (233) P= .426

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A	B18B	B19A
BOBS	.2267 (233) P= .000	-.0784 (235) P= .231	.1234 (235) P= .059	.0270 (235) P= .680	.0602 (235) P= .359	.1114 (234) P= .089	.1873 (235) P= .004	-.0051 (235) P= .938	.0309 (235) P= .637	-.0525 (235) P= .423	.0782 (234) P= .256
BF	.1090 (236) P= .095	-.0177 (238) P= .786	.0808 (238) P= .214	.0049 (238) P= .940	.0565 (238) P= .385	.0410 (237) P= .530	.1058 (238) P= .104	.0666 (237) P= .307	.0288 (237) P= .660	.0303 (237) P= .643	-.0482 (237) P= .666
BF	.0585 (236) P= .371	-.0862 (238) P= .185	.1017 (238) P= .118	.0341 (238) P= .600	.0583 (238) P= .404	.1424 (237) P= .028	.1658 (238) P= .010	-.1192 (237) P= .067	.0617 (237) P= .344	.0676 (237) P= .300	-.0099 (237) P= .880
LF	-.0591 (236) P= .366	.0043 (238) P= .947	-.1617 (238) P= .013	-.0828 (236) P= .205	-.1082 (238) P= .096	-.0783 (237) P= .230	-.2282 (238) P= .000	.0403 (237) P= .537	-.0456 (237) P= .485	-.0099 (237) P= .879	-.0648 (237) P= .320
PDEC	.1955 (235) P= .003	.0106 (237) P= .871	.2268 (237) P= .000	.0408 (237) P= .532	.1146 (237) P= .078	.2247 (236) P= .001	.3707 (237) P= .000	-.0638 (236) P= .329	.0298 (236) P= .653	.1224 (236) P= .061	.0203 (236) P= .757
L1	.0218 (237) P= .739	.0164 (239) P= .801	.0320 (239) P= .623	.0198 (239) P= .765	-.0243 (239) P= .709	-.0017 (238) P= .979	-.0469 (239) P= .470	.1250 (238) P= .054	.0469 (238) P= .472	-.1050 (238) P= .106	-.0330 (238) P= .614
L3	-.0051 (237) P= .938	-.1122 (239) P= .083	.0276 (239) P= .672	.0012 (239) P= .985	.0196 (239) P= .763	-.0205 (238) P= .753	.0407 (239) P= .531	.0596 (238) P= .360	.0408 (238) P= .531	.0688 (238) P= .291	-.0094 (238) P= .885
L4	.0822 (237) P= .208	.0568 (239) P= .382	.1848 (239) P= .004	.0522 (239) P= .422	.1188 (239) P= .067	.1770 (238) P= .006	.0971 (239) P= .134	-.1532 (238) P= .018	.0415 (238) P= .524	-.0842 (238) P= .196	.0894 (238) P= .170
L5	.0266 (237) P= .683	.1040 (239) P= .109	.1940 (239) P= .003	.0256 (239) P= .694	.1126 (239) P= .082	.1270 (238) P= .050	.0265 (239) P= .684	-.0195 (238) P= .765	.0579 (238) P= .378	-.0201 (238) P= .757	.1778 (238) P= .006
L6	.1690 (237) P= .009	.0478 (239) P= .466	.2711 (239) P= .000	.0180 (239) P= .829	.0609 (239) P= .348	.1825 (238) P= .005	.1602 (239) P= .013	-.0563 (238) P= .388	.0128 (238) P= .848	.0381 (238) P= .559	.1993 (238) P= .002
L88	.1365 (237) P= .036	.1512 (239) P= .019	.2169 (239) P= .001	.1212 (239) P= .061	.1305 (239) P= .044	.1149 (238) P= .077	.0524 (239) P= .420	-.0037 (238) P= .955	-.0070 (238) P= .915	.0453 (238) P= .487	.2966 (238) P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A	B18B	B19A
L8B	.0886	.1045	.1912	.1087	.0982	.1431	.1329	-.0490	-.0415	.0842	.1990
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .176	P= .107	P= .003	P= .093	P= .130	P= .027	P= .040	P= .451	P= .524	P= .196	P= .002
L9	.1937	.0662	.2215	-.0208	.0970	.0271	.2621	-.0198	.1499	.0778	.2300
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .003	P= .308	P= .001	P= .749	P= .135	P= .000	P= .000	P= .761	P= .021	P= .232	P= .000
L10	.1837	.0335	.0804	-.0157	.0151	.2080	.1598	-.0355	-.0042	-.0643	.1130
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .005	P= .606	P= .216	P= .809	P= .816	P= .001	P= .013	P= .586	P= .949	P= .323	P= .082
L11	.1029	.0122	.2303	.1066	.1938	.0611	.1727	-.0090	.0399	.0380	.0119
	(236)	(238)	(238)	(238)	(238)	(237)	(238)	(237)	(237)	(237)	(237)
	P= .115	P= .852	P= .000	P= .101	P= .003	P= .349	P= .008	P= .891	P= .541	P= .561	P= .856
BC	.0403	.0110	.0814	.0335	.0279	.0251	.0565	.1120	.0550	-.0095	-.0013
	(236)	(238)	(238)	(238)	(238)	(237)	(238)	(237)	(237)	(237)	(237)
	P= .538	P= .866	P= .211	P= .607	P= .668	P= .700	P= .385	P= .085	P= .399	P= .884	P= .984
TS	.1435	.1505	.3178	.0923	.1502	.2058	.1249	-.0448	.0172	.0843	.3150
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .027	P= .020	P= .000	P= .155	P= .020	P= .001	P= .054	P= .495	P= .792	P= .497	P= .000
FL	.2239	.0626	.2842	.0564	.1761	.3393	.2785	-.0776	.0828	-.0004	.1719
	(236)	(238)	(238)	(238)	(238)	(237)	(238)	(237)	(237)	(237)	(237)
	P= .001	P= .337	P= .000	P= .386	P= .006	P= .000	P= .000	P= .234	P= .204	P= .996	P= .008
CP	.1246	.0463	.3130	.0755	.1745	.1541	.1687	-.0180	.0710	.0573	.1612
	(236)	(238)	(238)	(238)	(238)	(237)	(238)	(237)	(237)	(237)	(237)
	P= .056	P= .477	P= .000	P= .246	P= .007	P= .018	P= .009	P= .783	P= .276	P= .380	P= .013
CSV	.1809	.1175	.2589	.0046	.1188	.3450	.2272	-.0385	.1090	.0167	.2660
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .005	P= .070	P= .000	P= .944	P= .067	P= .000	P= .000	P= .554	P= .093	P= .798	P= .000
CBLS	.1412	.1720	.2726	.1188	.1272	.1792	.1079	-.0281	.0109	-.0038	.2476
	(237)	(239)	(239)	(239)	(239)	(238)	(239)	(238)	(238)	(238)	(238)
	P= .030	P= .008	P= .000	P= .078	P= .050	P= .006	P= .096	P= .666	P= .868	P= .953	P= .000
PTL	.2001	.1226	.3500	.0649	.1608	.2915	.2298	-.0319	.0868	.0333	.2691
	(236)	(238)	(238)	(238)	(238)	(237)	(238)	(237)	(237)	(237)	(237)
	P= .002	P= .059	P= .000	P= .319	P= .013	P= .000	P= .000	P= .625	P= .183	P= .610	P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B12	B13A	B13B	B14A	B14B	B15	B16	B17	B18A	B18B	B19A
B1	.0216 (237) P= .741	.0490 (239) P= .483	.1786 (239) P= .006	.1548 (239) P= .017	.1933 (239) P= .003	.0768 (238) P= .238	.0501 (239) P= .441	.0179 (238) P= .784	-.0327 (238) P= .616	.0489 (238) P= .453	.0341 (238) P= .601
B2	.1168 (237) P= .074	-.0295 (239) P= .650	.1423 (239) P= .028	-.0005 (239) P= .994	.0518 (239) P= .426	.1126 (238) P= .083	.0020 (239) P= .976	-.0046 (238) P= .944	.0218 (238) P= .737	.0521 (238) P= .424	-.0535 (238) P= .414
B3	-.0018 (237) P= .963	-.0051 (239) P= .937	.1183 (239) P= .068	.0672 (239) P= .301	.0747 (239) P= .250	.1456 (238) P= .025	.1545 (239) P= .017	-.0988 (238) P= .130	-.0097 (238) P= .884	.0708 (238) P= .276	.1056 (238) P= .104
B4	.1365 (237) P= .036	.0937 (239) P= .149	.1252 (239) P= .053	-.0042 (239) P= .949	.0592 (239) P= .362	.2058 (238) P= .001	.3700 (239) P= .000	.0483 (238) P= .458	.0278 (238) P= .675	-.0575 (238) P= .377	.1958 (238) P= .002
B5	.0916 (237) P= .160	-.0479 (239) P= .461	.1476 (239) P= .022	.0172 (239) P= .792	.0602 (239) P= .356	.1161 (238) P= .074	.1955 (239) P= .002	.1185 (238) P= .068	.0233 (238) P= .720	.1019 (238) P= .117	.1055 (238) P= .104
B6	.0055 (237) P= .932	.0925 (239) P= .154	.1715 (239) P= .008	.0253 (239) P= .698	.0950 (239) P= .143	.2090 (238) P= .001	.1828 (239) P= .005	.0729 (238) P= .263	.0462 (238) P= .478	.0556 (238) P= .393	.0706 (238) P= .278
B7	-.0131 (237) P= .841	.0732 (239) P= .260	.0849 (239) P= .191	-.0751 (239) P= .248	-.0256 (239) P= .693	-.0258 (238) P= .692	-.0210 (239) P= .746	.0723 (238) P= .267	.0843 (238) P= .195	-.0448 (238) P= .491	-.0018 (238) P= .978
B8	.1808 (237) P= .030	.0503 (239) P= .439	.0887 (239) P= .172	.1958 (239) P= .002	.1520 (239) P= .018	.1372 (238) P= .034	.1669 (239) P= .010	.0333 (238) P= .609	.1839 (238) P= .026	.0289 (238) P= .658	.0680 (238) P= .326
B9	.1616 (237) P= .013	.0316 (238) P= .627	.2184 (238) P= .001	.0617 (238) P= .343	.1537 (238) P= .018	.2376 (237) P= .000	.2297 (238) P= .000	-.0836 (237) P= .504	.0775 (237) P= .234	.1147 (237) P= .078	.1881 (237) P= .004
B10	.1088 (237) P= .095	.1293 (238) P= .046	.1482 (238) P= .022	.0076 (238) P= .907	.0026 (238) P= .968	.0965 (237) P= .139	.0371 (238) P= .569	-.0852 (237) P= .191	.0500 (237) P= .444	-.0421 (237) P= .519	.0203 (237) P= .756
B11	.2632 (237) P= .000	.0822 (237) P= .518	.2156 (237) P= .001	.1865 (237) P= .004	.2890 (237) P= .000	.1603 (236) P= .014	.2398 (237) P= .000	.0358 (236) P= .584	.0892 (236) P= .172	.0831 (236) P= .510	.2878 (236) P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	B12	B13A	B13B	B19A	B19B	B15	B16	B17	B18A	B18B	B19A
B12	1.0000 (237) P= .	.1230 (237) P= .059	.2243 (237) P= .001	.0001 (237) P= .998	.0651 (237) P= .318	.2761 (236) P= .000	.1911 (237) P= .003	-.0366 (236) P= .576	.0656 (236) P= .315	.0181 (236) P= .782	.1916 (236) P= .003
B13A	.1230 (237) P= .059	1.0000 (239) P= .	.4002 (239) P= .000	.1737 (239) P= .007	.1841 (239) P= .004	.1157 (238) P= .075	.0512 (239) P= .431	.0361 (238) P= .579	-.0520 (238) P= .424	-.0160 (238) P= .806	.1982 (238) P= .002
B13B	.2243 (237) P= .001	.4002 (239) P= .000	1.0000 (239) P= .	.1932 (239) P= .003	.4682 (239) P= .000	.1524 (238) P= .019	.1683 (239) P= .009	.0520 (238) P= .425	.0483 (238) P= .458	.0662 (238) P= .309	.1934 (238) P= .003
B19A	.0001 (237) P= .998	.1737 (239) P= .007	.1932 (239) P= .003	1.0000 (239) P= .	.7772 (239) P= .000	.1216 (238) P= .061	.0156 (239) P= .813	.0192 (238) P= .769	.0425 (238) P= .514	.1372 (238) P= .034	-.0405 (238) P= .534
B19B	.0651 (237) P= .318	.1841 (239) P= .004	.4682 (239) P= .000	.7772 (239) P= .000	1.0000 (239) P= .	.1284 (238) P= .048	.0783 (239) P= .228	-.0146 (238) P= .823	.0692 (238) P= .288	.1395 (238) P= .032	.0285 (238) P= .661
B15	.2761 (236) P= .000	.1157 (238) P= .075	.1524 (238) P= .019	.1216 (238) P= .061	.1284 (238) P= .048	1.0000 (238) P= .	.3382 (238) P= .000	-.0248 (237) P= .704	.1108 (237) P= .089	.0424 (237) P= .516	.2485 (237) P= .000
B16	.1911 (237) P= .003	.0512 (239) P= .431	.1683 (239) P= .009	.0156 (239) P= .813	.0783 (239) P= .228	.3382 (238) P= .000	1.0000 (239) P= .	.1019 (238) P= .117	-.0063 (238) P= .923	.0853 (238) P= .190	.1542 (238) P= .017
B17	-.0366 (236) P= .576	.0361 (238) P= .579	.0520 (238) P= .425	.0192 (238) P= .769	-.0146 (238) P= .823	-.0248 (237) P= .704	.1019 (238) P= .117	1.0000 (238) P= .	.0247 (238) P= .705	-.0457 (238) P= .483	.0083 (237) P= .899
B18A	.0656 (236) P= .315	-.0520 (238) P= .424	.0483 (238) P= .458	.0425 (238) P= .514	.0692 (238) P= .288	.1108 (237) P= .089	-.0063 (238) P= .923	.0247 (238) P= .705	1.0000 (236) P= .	.2923 (238) P= .000	.0690 (237) P= .290
B18B	.0181 (236) P= .782	-.0160 (238) P= .806	.0662 (238) P= .309	.1372 (238) P= .034	.1395 (238) P= .032	.0424 (237) P= .516	.0853 (238) P= .190	-.0457 (238) P= .483	.2923 (238) P= .000	1.0000 (238) P= .	.0862 (237) P= .186
B19A	.1916 (236) P= .003	.1982 (238) P= .002	.1934 (238) P= .003	-.0405 (238) P= .534	.0285 (238) P= .661	.2485 (237) P= .000	.1542 (238) P= .017	.0083 (237) P= .899	.0690 (237) P= .290	.0862 (237) P= .186	1.0000 (238) P= .

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
SEI	.0890	-.0196	-.1180	-.1261	.1668	-.0749	.1591	.1108	-.0237	-.0642	-.0196
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .171	P= .766	P= .080	P= .058	P= .010	P= .251	P= .017	P= .049	P= .723	P= .334	P= .771
P1	-.1685	.1226	-.0106	.0681	.0116	-.1822	-.1622	-.0641	-.0595	.1287	-.1500
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .011	P= .061	P= .871	P= .307	P= .860	P= .029	P= .015	P= .340	P= .373	P= .052	P= .025
P2	-.1308	.0592	-.0022	-.0563	.0311	-.0098	-.2322	-.1903	-.0662	-.0006	-.0660
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .044	P= .367	P= .973	P= .399	P= .635	P= .881	P= .000	P= .004	P= .320	P= .992	P= .326
P3	.0988	-.0453	.0862	.0101	-.0847	.0713	.1830	.0741	.0389	-.0761	.0258
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .130	P= .490	P= .187	P= .880	P= .195	P= .275	P= .006	P= .271	P= .560	P= .251	P= .701
P4	.1062	-.0597	-.0997	.0025	.0657	-.0235	.0828	.1163	.0362	.0336	.1199
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .102	P= .362	P= .127	P= .971	P= .315	P= .719	P= .215	P= .083	P= .588	P= .613	P= .073
P5	.0627	-.0452	.0797	-.0259	-.0407	.0701	.1236	.0655	.0030	-.0317	.0501
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .336	P= .490	P= .223	P= .698	P= .536	P= .282	P= .063	P= .330	P= .964	P= .633	P= .455
B1	-.0938	.0240	-.0473	.0800	.0056	-.1239	-.1879	-.1201	-.0055	.0586	-.1202
	(238)	(235)	(236)	(227)	(236)	(237)	(224)	(223)	(227)	(229)	(224)
	P= .149	P= .714	P= .469	P= .230	P= .932	P= .057	P= .005	P= .074	P= .935	P= .377	P= .073
B2	-.0219	.0012	.1506	-.1237	.0151	.1547	-.0647	-.0865	-.0868	-.0712	-.0010
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .736	P= .985	P= .021	P= .063	P= .702	P= .017	P= .333	P= .198	P= .193	P= .283	P= .988
B3	.0142	.0058	-.1011	-.0192	-.0296	-.0251	.1580	.1912	.0604	.0275	.1107
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .828	P= .930	P= .121	P= .778	P= .651	P= .700	P= .017	P= .004	P= .365	P= .679	P= .098
B4	.0913	-.0322	.0332	.1280	.0198	.0094	.1033	-.0223	.0279	.0069	-.0379
	(238)	(235)	(236)	(227)	(236)	(237)	(224)	(223)	(227)	(229)	(224)
	P= .160	P= .624	P= .612	P= .054	P= .762	P= .885	P= .122	P= .741	P= .676	P= .917	P= .572
SCT2	-.2510	-.0110	-.0489	.1357	.0400	-.0009	-.1822	-.2096	-.0800	.0388	-.1115
	(236)	(233)	(234)	(225)	(234)	(235)	(224)	(221)	(225)	(227)	(222)
	P= .000	P= .068	P= .457	P= .042	P= .542	P= .989	P= .006	P= .002	P= .232	P= .569	P= .098

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
SCT3	-.0222 (236) P= .735	.0486 (233) P= .461	-.0833 (234) P= .204	-.1404 (225) P= .035	-.0240 (234) P= .715	-.0744 (235) P= .256	-.1539 (224) P= .021	-.1352 (221) P= .045	.0684 (225) P= .307	-.0594 (227) P= .373	-.1198 (222) P= .075
SCT4	.0781 (236) P= .232	-.1055 (233) P= .108	.0626 (234) P= .340	.0666 (225) P= .320	-.0085 (234) P= .897	.0805 (235) P= .219	.1483 (224) P= .027	.1665 (221) P= .013	-.0779 (225) P= .245	-.0096 (227) P= .885	.1257 (222) P= .061
SCT5	.1781 (236) P= .006	.1088 (233) P= .097	.0353 (234) P= .591	-.0007 (225) P= .992	.0399 (234) P= .548	.0000 (235) P=1.000	.2608 (224) P= .000	.2384 (221) P= .000	.0851 (225) P= .203	.0170 (227) P= .799	.1383 (222) P= .040
CBST4	.1098 (238) P= .092	.0266 (235) P= .685	.0999 (236) P= .126	.0402 (227) P= .547	.0383 (236) P= .558	.0722 (237) P= .268	.1965 (226) P= .003	.1692 (223) P= .011	-.0088 (227) P= .895	-.0746 (229) P= .261	.0022 (226) P= .976
CBST3	-.0168 (238) P= .801	-.0879 (235) P= .465	-.0608 (236) P= .352	-.0655 (227) P= .326	-.0069 (236) P= .916	-.0650 (237) P= .319	-.0667 (226) P= .318	.0296 (223) P= .660	-.0452 (227) P= .498	-.0157 (229) P= .813	.0380 (226) P= .612
CBST2	-.1126 (238) P= .083	-.0010 (235) P= .988	-.0501 (236) P= .444	-.0803 (227) P= .228	-.0568 (236) P= .388	-.0488 (237) P= .493	-.1516 (226) P= .023	-.2329 (223) P= .000	.1507 (227) P= .023	.0493 (229) P= .458	-.0584 (226) P= .386
SCL2	-.2218 (234) P= .001	-.1320 (231) P= .045	-.0299 (232) P= .651	-.1001 (223) P= .136	.1118 (232) P= .091	-.0687 (233) P= .326	-.2385 (222) P= .000	-.0821 (219) P= .226	-.0046 (223) P= .946	.0040 (225) P= .952	-.1393 (220) P= .039
SCL3	-.0995 (234) P= .129	-.0264 (231) P= .690	.0488 (232) P= .501	.0098 (223) P= .885	.0508 (232) P= .441	.1180 (233) P= .082	-.1714 (222) P= .011	-.2333 (219) P= .000	-.0785 (223) P= .243	-.0676 (225) P= .478	-.0618 (220) P= .361
SCL4	.1220 (234) P= .062	.0106 (231) P= .873	-.0768 (232) P= .247	.0532 (223) P= .429	-.1381 (232) P= .041	-.0213 (233) P= .747	.1899 (222) P= .026	.1609 (219) P= .017	.0189 (223) P= .825	.0584 (225) P= .385	.0871 (220) P= .198
SCL5	.1985 (234) P= .002	.1146 (231) P= .082	.0972 (232) P= .140	.0206 (223) P= .760	.0512 (232) P= .438	-.0165 (233) P= .802	.2976 (222) P= .000	.2149 (219) P= .001	.0628 (223) P= .351	-.0091 (225) P= .891	.1411 (220) P= .073
CBSL4	.1658 (238) P= .010	.0581 (235) P= .375	.1671 (236) P= .010	-.0083 (227) P= .901	-.0503 (236) P= .442	-.0078 (237) P= .904	.0973 (226) P= .145	.0884 (223) P= .189	.0137 (227) P= .837	.0586 (229) P= .377	-.0336 (226) P= .617

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
CHSL3	-.0217	-.0158	-.0698	-.0246	-.0453	.0172	.0739	.0638	.0226	-.0393	.0713
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .740	P= .815	P= .288	P= .712	P= .488	P= .792	P= .268	P= .343	P= .735	P= .555	P= .288
CHSL2	-.1477	-.0407	-.0322	.0114	.0918	.0557	-.2360	-.1745	-.0809	-.0813	-.0613
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .023	P= .535	P= .623	P= .868	P= .160	P= .393	P= .000	P= .009	P= .226	P= .536	P= .361
FSBL1	-.0892	-.0597	-.0376	-.0781	.1140	.0065	-.0760	-.1969	.0828	.0158	-.0576
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .850	P= .362	P= .566	P= .266	P= .081	P= .921	P= .255	P= .003	P= .521	P= .816	P= .389
FSBL2	-.0219	.0286	-.0693	.0051	.0526	.0119	-.1517	-.1302	.1122	-.0356	-.0795
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .737	P= .663	P= .289	P= .939	P= .421	P= .855	P= .023	P= .052	P= .092	P= .594	P= .236
FSBL3	-.0057	-.0056	.1233	-.0578	-.1181	.0412	.0720	.1265	-.0329	-.0135	.1588
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .930	P= .931	P= .058	P= .386	P= .070	P= .528	P= .281	P= .059	P= .622	P= .839	P= .017
FSBL4	.0602	.0156	-.0693	.1186	.0327	-.0700	.0991	.0807	-.0939	.0838	-.0937
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .355	P= .812	P= .289	P= .085	P= .617	P= .283	P= .137	P= .230	P= .159	P= .514	P= .162
FSBT2	.0098	-.1148	.0332	-.0099	-.0483	-.0391	-.0398	-.0889	-.0561	-.0923	.0007
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .880	P= .080	P= .612	P= .882	P= .459	P= .549	P= .556	P= .207	P= .400	P= .164	P= .992
FSBT3	-.1820	.0120	-.0815	.0502	-.0231	.0881	-.0827	-.0879	-.0004	.0932	-.0806
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .029	P= .854	P= .526	P= .452	P= .724	P= .197	P= .523	P= .191	P= .995	P= .160	P= .231
FSBT4	.1335	.0229	.0094	-.0276	.0862	-.0759	.0991	.1291	.0261	-.0162	.0962
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .040	P= .727	P= .886	P= .679	P= .187	P= .248	P= .137	P= .054	P= .696	P= .807	P= .151
BPIS2	-.1719	-.0010	.0662	-.1016	-.0135	.0439	-.1885	-.0759	.0198	-.0582	-.1395
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .008	P= .988	P= .312	P= .127	P= .837	P= .501	P= .004	P= .259	P= .767	P= .381	P= .037
BPIS3	-.0552	.0940	-.1048	.1537	.0471	.0318	-.0790	-.0981	-.0208	.1168	-.0180
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(224)
	P= .396	P= .151	P= .110	P= .021	P= .472	P= .631	P= .237	P= .161	P= .760	P= .079	P= .835

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
BPI36	.1793 (238) P= .006	-.0556 (235) P= .396	.0575 (236) P= .379	-.0387 (227) P= .603	-.0575 (236) P= .380	-.0578 (237) P= .375	.2276 (226) P= .001	.1617 (223) P= .016	.0208 (227) P= .760	-.0328 (229) P= .626	.1092 (226) P= .103
ACT1	.0402 (238) P= .537	-.0732 (235) P= .263	-.0888 (236) P= .176	-.0431 (227) P= .519	-.0209 (236) P= .750	-.1171 (237) P= .072	.1096 (226) P= .101	.0033 (223) P= .961	-.0400 (227) P= .549	-.0928 (229) P= .162	-.0679 (226) P= .190
ACT2	.1083 (238) P= .095	.0697 (235) P= .287	-.0597 (236) P= .361	-.0911 (227) P= .171	-.0629 (236) P= .336	-.1810 (237) P= .030	.0666 (226) P= .319	.1899 (223) P= .025	.0905 (227) P= .174	-.0104 (229) P= .875	.0050 (226) P= .941
ACT3	.1735 (238) P= .007	-.0129 (235) P= .843	-.0328 (236) P= .616	-.0418 (227) P= .531	.0782 (236) P= .256	.0278 (237) P= .670	.1846 (226) P= .028	.1780 (223) P= .008	.0045 (227) P= .947	.0793 (229) P= .232	.0260 (226) P= .699
ACT4	.0785 (238) P= .252	-.0096 (235) P= .883	.0156 (236) P= .811	-.0865 (227) P= .486	-.0015 (236) P= .981	-.0338 (237) P= .609	.1307 (226) P= .050	.1238 (223) P= .066	.0491 (227) P= .462	-.0162 (229) P= .807	-.0816 (226) P= .536
ACT5	.1121 (238) P= .084	-.0197 (235) P= .764	-.0218 (236) P= .739	.1256 (227) P= .059	-.0586 (236) P= .403	.0276 (237) P= .672	.1041 (226) P= .119	.0003 (223) P= .997	-.0469 (227) P= .482	.1188 (229) P= .074	.0632 (226) P= .346
ACT6	.0692 (238) P= .288	.0095 (235) P= .885	-.0156 (236) P= .811	-.0858 (227) P= .198	-.0312 (236) P= .633	-.0923 (237) P= .157	.0044 (226) P= .948	.1083 (223) P= .107	.0288 (227) P= .666	-.0946 (229) P= .153	-.0006 (226) P= .993
BOW1	-.0873 (234) P= .183	.0104 (231) P= .876	-.1455 (232) P= .027	-.0271 (223) P= .687	.0298 (232) P= .656	-.1271 (233) P= .053	-.1405 (222) P= .036	-.0183 (219) P= .787	.0078 (223) P= .908	-.0452 (225) P= .500	.0401 (220) P= .767
BOW2	-.0579 (234) P= .378	.0486 (231) P= .463	.0799 (232) P= .225	.0258 (223) P= .706	-.0092 (232) P= .889	.1238 (233) P= .060	-.0509 (222) P= .451	-.0817 (219) P= .228	.0779 (223) P= .246	.0256 (225) P= .703	.0212 (220) P= .754
BOW3	-.0852 (233) P= .195	-.0185 (230) P= .827	.0928 (231) P= .162	-.0109 (222) P= .872	-.0349 (231) P= .598	.0907 (232) P= .169	-.0614 (221) P= .364	-.0852 (218) P= .507	-.0529 (222) P= .437	-.0928 (224) P= .168	-.0681 (219) P= .316
BOW4	.0705 (233) P= .284	.0201 (230) P= .761	.0044 (231) P= .947	-.0083 (222) P= .949	-.0886 (231) P= .180	-.0463 (232) P= .483	.0839 (221) P= .214	.0092 (218) P= .893	-.0225 (222) P= .739	.1678 (224) P= .012	-.0028 (219) P= .967

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
BOBS	.1621 (238) P= .030	-.0411 (231) P= .534	-.0266 (232) P= .687	.0238 (223) P= .723	.0880 (232) P= .181	-.0426 (233) P= .518	.1899 (222) P= .005	.1397 (219) P= .039	-.0107 (223) P= .874	-.0863 (225) P= .489	.0611 (220) P= .367
BP	.0762 (237) P= .242	.0368 (234) P= .580	.0378 (235) P= .565	.0626 (226) P= .349	.1015 (235) P= .121	-.0818 (236) P= .210	.0862 (224) P= .199	.0715 (223) P= .288	-.0998 (226) P= .135	.0515 (228) P= .439	.0007 (224) P= .992
SP	.0866 (237) P= .475	.0051 (234) P= .938	-.0598 (235) P= .360	-.0917 (226) P= .169	-.0629 (235) P= .337	.0922 (236) P= .158	.1688 (224) P= .011	.2500 (223) P= .000	.0702 (226) P= .294	-.1073 (228) P= .106	.0533 (224) P= .427
LP	-.1132 (237) P= .082	-.0019 (234) P= .977	-.0371 (235) P= .572	-.0767 (226) P= .251	.0260 (235) P= .692	-.0652 (236) P= .319	-.1105 (224) P= .098	-.1035 (223) P= .103	.1075 (226) P= .107	-.0185 (228) P= .828	-.0761 (224) P= .257
PBBC	.2038 (236) P= .002	.1180 (234) P= .082	.0588 (234) P= .371	.0638 (225) P= .341	.0469 (234) P= .475	.0583 (235) P= .408	.2213 (224) P= .001	.1973 (221) P= .003	-.0322 (225) P= .631	.0374 (227) P= .575	.0633 (222) P= .348
L1	.0119 (238) P= .855	-.0907 (235) P= .166	-.0831 (236) P= .203	.0741 (227) P= .266	-.0659 (236) P= .314	-.0731 (237) P= .262	-.0201 (224) P= .764	-.0758 (223) P= .262	.0577 (227) P= .387	-.1408 (229) P= .033	.0578 (224) P= .389
L3	.0363 (238) P= .577	.0561 (235) P= .392	-.0470 (236) P= .472	-.0576 (227) P= .388	-.0116 (236) P= .860	-.0297 (237) P= .649	-.0075 (226) P= .911	-.1099 (223) P= .102	-.0202 (227) P= .762	-.1167 (229) P= .078	.0584 (224) P= .386
L4	.1727 (238) P= .008	-.0048 (235) P= .942	.1211 (236) P= .063	-.0507 (227) P= .447	-.1498 (236) P= .022	.0580 (237) P= .374	.2257 (226) P= .001	.1966 (223) P= .003	-.0281 (227) P= .673	-.0592 (229) P= .372	.1586 (224) P= .018
L5	.1940 (238) P= .003	-.1200 (235) P= .066	.2096 (236) P= .001	.0766 (227) P= .251	-.0938 (236) P= .151	.1402 (237) P= .031	.1851 (226) P= .005	.0779 (223) P= .247	-.0469 (227) P= .482	.0978 (229) P= .140	.1810 (224) P= .035
L6	.2379 (238) P= .000	-.0543 (235) P= .408	.0809 (236) P= .216	-.0170 (227) P= .799	.0439 (236) P= .502	-.0277 (237) P= .671	.2842 (226) P= .000	.2157 (223) P= .001	.0043 (227) P= .949	-.0886 (229) P= .466	.2657 (224) P= .000
L6A	.2593 (238) P= .000	-.1315 (235) P= .044	.1391 (236) P= .033	-.0140 (227) P= .834	-.0008 (236) P= .995	.1356 (237) P= .037	.1517 (226) P= .023	.0941 (223) P= .161	.0609 (227) P= .361	-.0567 (229) P= .393	.1766 (224) P= .008

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
L8B	.2346 (238) P= .000	-.0629 (235) P= .337	.0605 (236) P= .355	.0666 (227) P= .318	-.0555 (236) P= .396	.0391 (237) P= .549	.2248 (226) P= .001	.2093 (223) P= .002	.0081 (227) P= .904	.0118 (229) P= .859	.1435 (224) P= .065
L9	.2865 (238) P= .000	-.0172 (235) P= .793	.1044 (236) P= .110	-.0046 (227) P= .945	.0166 (236) P= .800	-.0053 (237) P= .936	.2001 (226) P= .003	.2678 (223) P= .000	-.0423 (227) P= .526	-.0844 (229) P= .504	.2244 (224) P= .001
L10	.1788 (238) P= .006	-.0564 (235) P= .389	.0273 (236) P= .677	-.0128 (227) P= .848	-.0776 (236) P= .235	.0137 (237) P= .834	.1749 (226) P= .008	.1614 (223) P= .016	.0409 (227) P= .539	-.0262 (229) P= .715	.0538 (224) P= .427
L11	.2092 (237) P= .001	-.0280 (234) P= .670	.0572 (235) P= .382	.0585 (226) P= .381	-.0273 (235) P= .677	.0217 (236) P= .740	.2543 (225) P= .000	.2499 (222) P= .000	.0571 (226) P= .393	-.0267 (228) P= .688	.1584 (223) P= .018
BC	.0579 (237) P= .375	.0024 (234) P= .971	-.0562 (235) P= .391	.0481 (226) P= .472	-.0604 (235) P= .356	-.0738 (236) P= .259	-.0123 (225) P= .854	-.1150 (222) P= .087	.0233 (226) P= .728	-.1573 (228) P= .017	.0656 (223) P= .330
TS	.3382 (238) P= .000	-.1822 (235) P= .029	.1979 (236) P= .002	.0489 (227) P= .464	-.0479 (236) P= .464	.1177 (237) P= .071	.2951 (226) P= .000	.2069 (223) P= .002	.0013 (227) P= .984	.0161 (229) P= .809	.2570 (224) P= .000
FL	.3347 (237) P= .000	-.0366 (234) P= .580	.1276 (235) P= .051	.0043 (226) P= .948	-.0784 (235) P= .231	.0430 (236) P= .511	.3303 (225) P= .000	.3416 (222) P= .000	.0168 (226) P= .802	-.0571 (228) P= .391	.2301 (223) P= .001
CP	.2967 (237) P= .000	-.0732 (234) P= .264	.1465 (235) P= .025	.0486 (226) P= .505	-.0566 (235) P= .388	.0603 (236) P= .356	.3009 (225) P= .000	.2098 (222) P= .002	.0064 (226) P= .924	-.0159 (228) P= .811	.2569 (223) P= .000
CBT	.3056 (238) P= .000	-.0966 (235) P= .140	.1718 (236) P= .008	.0457 (227) P= .498	-.0329 (236) P= .615	.0888 (237) P= .173	.2776 (226) P= .000	.2067 (223) P= .002	-.0335 (227) P= .615	.0161 (229) P= .808	.2127 (224) P= .001
CBL8	.2839 (238) P= .000	-.1120 (235) P= .087	.1210 (236) P= .064	.0358 (227) P= .591	-.1167 (236) P= .074	.0712 (237) P= .275	.2569 (226) P= .000	.1637 (223) P= .014	.0232 (227) P= .728	-.0729 (229) P= .272	.1992 (224) P= .003
PTL	.3601 (237) P= .000	-.1165 (234) P= .075	.1592 (235) P= .015	.0505 (226) P= .450	-.0650 (235) P= .321	.0632 (236) P= .333	.3653 (225) P= .000	.2535 (222) P= .000	-.0001 (226) P= .999	-.0827 (228) P= .521	.2792 (223) P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
B1	.1390	.0145	.0513	.0804	.0296	.0251	.1647	.0579	-.1618	.1221	.0507
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(226)
	P= .032	P= .825	P= .433	P= .228	P= .651	P= .700	P= .013	P= .390	P= .015	P= .065	P= .451
B2	.0896	-.0967	-.0727	.0181	.0078	-.0051	.0662	.0136	-.1031	.0870	.0071
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(226)
	P= .168	P= .139	P= .266	P= .786	P= .905	P= .938	P= .322	P= .840	P= .121	P= .190	P= .916
B3	.0737	.0641	.1180	.0629	.0726	.0813	.2103	.1531	.0088	.0534	.0233
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(226)
	P= .258	P= .328	P= .070	P= .346	P= .267	P= .212	P= .001	P= .022	P= .895	P= .421	P= .729
B4	.2107	-.0099	.0196	-.0546	-.0509	.0928	.1969	.1934	.0621	-.0595	.1984
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(226)
	P= .001	P= .880	P= .764	P= .413	P= .437	P= .156	P= .003	P= .004	P= .352	P= .370	P= .003
B5	.1139	.0393	.1135	.0901	.0638	.0680	.1975	.1936	.0357	.0010	.1573
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(226)
	P= .080	P= .549	P= .082	P= .176	P= .332	P= .297	P= .003	P= .004	P= .593	P= .988	P= .019
B6	.1546	-.0008	.0109	.1698	-.0067	-.0656	.2136	.1730	.0271	.1209	.0573
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(226)
	P= .017	P= .991	P= .868	P= .010	P= .918	P= .315	P= .001	P= .010	P= .684	P= .068	P= .393
B7	-.0237	.0740	-.0877	.0765	.0888	-.0367	.0503	-.0563	-.0298	-.0950	.0087
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(226)
	P= .716	P= .258	P= .179	P= .251	P= .176	P= .574	P= .452	P= .420	P= .655	P= .152	P= .897
B8	.0525	.0350	.0581	.0833	-.1293	.0238	.2837	.1580	.0060	.0106	.0840
	(238)	(235)	(236)	(227)	(236)	(237)	(226)	(223)	(227)	(229)	(226)
	P= .420	P= .593	P= .408	P= .517	P= .047	P= .720	P= .000	P= .018	P= .929	P= .873	P= .210
B9	.2530	-.0592	.0636	.1090	.0593	.1827	.2608	.2055	.0031	.0011	.1209
	(237)	(234)	(235)	(227)	(235)	(236)	(226)	(223)	(227)	(229)	(226)
	P= .000	P= .367	P= .332	P= .101	P= .366	P= .028	P= .000	P= .002	P= .963	P= .987	P= .071
B10	.1128	-.0914	.0725	.0360	.0898	.1507	.1882	.0053	.1512	.1042	.0392
	(237)	(234)	(235)	(227)	(235)	(236)	(226)	(223)	(227)	(229)	(226)
	P= .083	P= .163	P= .268	P= .610	P= .451	P= .021	P= .026	P= .937	P= .023	P= .116	P= .559
B11	.1727	.0752	.0920	.0650	-.0575	.1288	.2070	.2238	.0816	.0359	.1711
	(236)	(233)	(234)	(226)	(234)	(235)	(225)	(222)	(226)	(228)	(223)
	P= .008	P= .253	P= .160	P= .331	P= .381	P= .056	P= .002	P= .001	P= .534	P= .589	P= .010

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
B12	.2032 (236) P= .002	.0181 (233) P= .783	.0456 (234) P= .487	.0186 (226) P= .781	-.0901 (234) P= .170	.0997 (235) P= .128	.2213 (225) P= .001	.2659 (222) P= .000	.1338 (226) P= .044	-.0870 (228) P= .190	.2453 (223) P= .000
B13A	.0580 (238) P= .373	.0060 (235) P= .927	.1375 (236) P= .035	-.0322 (227) P= .629	-.0563 (236) P= .392	.1220 (237) P= .061	.0698 (226) P= .296	.1159 (223) P= .084	-.0219 (227) P= .743	.0217 (229) P= .744	.0187 (224) P= .781
B13B	.2685 (238) P= .000	-.0480 (235) P= .464	.0457 (236) P= .485	.0521 (227) P= .435	.0849 (236) P= .199	.1286 (237) P= .048	.2754 (226) P= .000	.2194 (223) P= .001	-.0365 (227) P= .584	.0186 (229) P= .780	.2208 (224) P= .001
B14A	.0040 (238) P= .951	.0879 (235) P= .465	.1419 (236) P= .029	.0337 (227) P= .613	.0643 (236) P= .325	.1769 (237) P= .006	-.0199 (226) P= .766	-.0058 (223) P= .931	.0009 (227) P= .989	.0128 (229) P= .848	.0899 (224) P= .180
B14B	.0505 (238) P= .438	.0440 (235) P= .502	.0711 (236) P= .277	.0928 (227) P= .163	.0873 (236) P= .182	.1755 (237) P= .007	.0870 (226) P= .192	.0758 (223) P= .260	-.0309 (227) P= .648	.0507 (229) P= .445	.1288 (224) P= .063
B15	.2726 (237) P= .000	.0201 (234) P= .759	.0165 (235) P= .801	.0203 (226) P= .762	-.0798 (235) P= .223	.0268 (236) P= .682	.1877 (225) P= .005	.3516 (222) P= .000	.0848 (226) P= .204	-.0429 (228) P= .519	.2495 (223) P= .000
B16	.3508 (238) P= .000	-.0221 (235) P= .736	.0016 (236) P= .980	.0101 (227) P= .880	.1022 (236) P= .117	-.0134 (237) P= .837	.2498 (226) P= .000	.2255 (223) P= .001	.0406 (227) P= .543	-.0066 (229) P= .920	.1837 (224) P= .006
B17	-.0542 (237) P= .406	-.0546 (234) P= .406	-.0666 (235) P= .309	-.0319 (226) P= .633	.1274 (235) P= .051	-.1191 (236) P= .068	-.0972 (225) P= .146	-.1026 (222) P= .127	-.0112 (226) P= .868	.0254 (228) P= .703	.0384 (223) P= .614
B18A	.0571 (237) P= .382	-.1259 (234) P= .054	-.1159 (235) P= .076	-.1006 (226) P= .132	.0270 (235) P= .681	-.0298 (236) P= .653	.0367 (225) P= .584	.1167 (222) P= .083	-.0079 (226) P= .906	-.0627 (228) P= .346	.1087 (223) P= .105
B18B	.0472 (237) P= .470	.0712 (234) P= .278	-.0976 (235) P= .136	.0245 (226) P= .718	-.0299 (235) P= .648	.0068 (236) P= .917	.0427 (225) P= .528	.0225 (222) P= .739	.0018 (226) P= .979	-.0323 (228) P= .628	.0506 (223) P= .454
B19A	.3969 (238) P= .000	.0009 (235) P= .989	.0435 (235) P= .507	.0272 (226) P= .684	-.0062 (235) P= .925	.0251 (236) P= .701	.1241 (225) P= .063	.1583 (222) P= .021	.1116 (226) P= .094	-.1798 (228) P= .007	.1927 (223) P= .004

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

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	B19B	B20	B21A	B21B	B21C	B21D	B21E	B21F	B21G	B21H	B21I
B19B	1.0000 (238) P= .	-.1339 (235) P= .040	.0877 (235) P= .180	.0618 (226) P= .358	.0132 (235) P= .840	.0697 (236) P= .286	.2512 (225) P= .000	.1855 (222) P= .006	-.0086 (226) P= .898	-.0842 (228) P= .506	.1722 (223) P= .010
B20	-.1339 (235) P= .040	1.0000 (235) P= .	.0500 (234) P= .446	.1978 (225) P= .003	-.1272 (233) P= .052	.1096 (234) P= .094	.0328 (223) P= .626	.0680 (221) P= .315	-.0604 (225) P= .367	.1224 (226) P= .066	.0205 (221) P= .762
B21A	.0877 (235) P= .180	.0500 (234) P= .446	1.0000 (236) P= .	.1133 (227) P= .089	-.1257 (234) P= .055	.2904 (235) P= .000	.1295 (224) P= .053	.0223 (223) P= .741	-.1587 (227) P= .017	.0842 (228) P= .205	-.0018 (223) P= .984
B21B	.0618 (226) P= .358	.1978 (225) P= .003	.1133 (227) P= .089	1.0000 (227) P= .	-.0078 (226) P= .911	.0856 (226) P= .200	.1600 (221) P= .017	-.0761 (220) P= .261	-.3739 (224) P= .000	.0881 (225) P= .000	-.0050 (226) P= .981
B21C	.0132 (235) P= .840	-.1272 (233) P= .052	-.1257 (234) P= .055	-.0078 (226) P= .911	1.0000 (236) P= .	-.0655 (235) P= .318	-.2341 (226) P= .000	-.1516 (223) P= .024	-.1768 (226) P= .008	-.0103 (228) P= .877	-.0898 (224) P= .180
B21D	.0697 (236) P= .286	.1096 (234) P= .094	.2904 (235) P= .000	.0856 (226) P= .200	-.0655 (235) P= .318	1.0000 (237) P= .	.1105 (224) P= .098	.0750 (223) P= .265	-.0760 (226) P= .255	.0169 (229) P= .799	.0761 (224) P= .257
B21E	.2512 (225) P= .000	.0328 (223) P= .626	.1295 (224) P= .053	.1600 (221) P= .017	-.2341 (226) P= .000	.1105 (226) P= .098	1.0000 (226) P= .	.4916 (223) P= .000	.0671 (223) P= .318	.0278 (225) P= .678	.3176 (224) P= .000
B21F	.1855 (222) P= .006	.0680 (221) P= .315	.0223 (223) P= .741	-.0761 (220) P= .261	-.1516 (223) P= .024	.0750 (223) P= .265	.4916 (223) P= .000	1.0000 (223) P= .	.1975 (222) P= .003	-.1120 (223) P= .095	.4820 (222) P= .000
B21G	-.0086 (226) P= .898	-.0604 (225) P= .367	-.1587 (227) P= .017	-.3739 (224) P= .000	-.1768 (226) P= .008	-.0760 (226) P= .255	.0671 (223) P= .318	.1975 (222) P= .003	1.0000 (227) P= .	-.2916 (226) P= .000	.0918 (222) P= .173
B21H	-.0842 (228) P= .506	.1224 (226) P= .066	.0842 (228) P= .205	.0881 (225) P= .000	-.0103 (228) P= .877	.0169 (229) P= .799	.0278 (225) P= .678	-.1120 (223) P= .095	-.2916 (226) P= .000	1.0000 (229) P= .	-.0730 (224) P= .276
B21I	.1722 (223) P= .010	.0205 (221) P= .762	-.0018 (223) P= .984	-.0050 (226) P= .981	-.0898 (224) P= .180	.0761 (224) P= .257	.3176 (224) P= .000	.4820 (222) P= .000	.0918 (222) P= .173	-.0730 (224) P= .276	1.0000 (224) P= .

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	B21J	BTL
SEX	.4048 (226) P= .000	.2872 (213) P= .000
P1	.0400 (226) P= .550	-.1977 (213) P= .004
P2	.0952 (226) P= .154	-.2151 (213) P= .002
P3	-.0704 (226) P= .292	.0931 (213) P= .176
P4	-.0430 (226) P= .520	.1921 (213) P= .005
P5	-.0676 (226) P= .478	.1111 (213) P= .106
A1	.0426 (226) P= .524	-.1590 (213) P= .020
A2	.0960 (226) P= .150	.0231 (213) P= .737
A3	-.1406 (226) P= .035	.0255 (213) P= .712
A4	.0008 (226) P= .991	.1259 (213) P= .067
SCT2	.0769 (224) P= .252	-.3336 (211) P= .000

	B21J	BTL
SCT3	-.0071 (224) P= .916	-.1926 (211) P= .005
SCT4	-.0281 (224) P= .676	.1154 (211) P= .095
SCT5	-.0898 (224) P= .459	.4378 (211) P= .000
CHST4	.0342 (226) P= .609	.2704 (213) P= .000
CHST3	-.0994 (226) P= .136	-.1342 (213) P= .051
CHST2	.1215 (226) P= .068	-.1632 (213) P= .017
SCL2	.0750 (222) P= .266	-.1934 (209) P= .005
SCL3	-.0339 (222) P= .615	-.2897 (209) P= .000
SCL4	.0147 (222) P= .828	.1749 (209) P= .011
SCL5	-.0219 (222) P= .746	.3723 (209) P= .000
CHSL4	.0512 (226) P= .448	.1282 (213) P= .062

	B21J	BTL
CHSL3	-.1171 (226) P= .079	-.0258 (213) P= .713
CHSL2	.0469 (226) P= .483	-.1403 (213) P= .041
FUNL1	.0356 (226) P= .598	-.1368 (213) P= .047
FUNL2	.0655 (226) P= .327	-.0296 (213) P= .667
FUNL3	-.0828 (226) P= .215	.0536 (213) P= .437
FUNL4	.0220 (226) P= .742	.0629 (213) P= .533
FUNT2	-.1077 (226) P= .106	-.0870 (213) P= .331
FUNT3	-.0229 (226) P= .733	-.1089 (213) P= .113
FUNT4	.0864 (226) P= .196	.1691 (213) P= .013
EPIS2	-.0362 (226) P= .588	-.2808 (213) P= .000
EPIS3	.0597 (226) P= .372	-.0173 (213) P= .802

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B213	BTL
BPIS4	-.0318 (226) P= .635	.2637 (213) P= .000
ACT1	.1609 (226) P= .015	.0503 (213) P= .465
ACT2	.0255 (226) P= .703	.1731 (213) P= .011
ACT3	.0839 (226) P= .209	.2072 (213) P= .002
ACT4	.0864 (226) P= .196	.1621 (213) P= .018
ACT5	.0369 (226) P= .581	.1802 (213) P= .008
ACT6	.0352 (226) P= .599	.0414 (213) P= .547
BOB1	.0726 (222) P= .281	-.0489 (210) P= .518
BOB2	-.1919 (222) P= .004	-.0160 (210) P= .817
BOB3	-.0896 (221) P= .184	-.2168 (209) P= .002
BOB4	.1832 (221) P= .006	.0676 (209) P= .331

	B213	BTL
NOWS	.0328 (222) P= .631	.2405 (210) P= .000
RF	.1598 (226) P= .016	.1564 (213) P= .022
SF	.0368 (226) P= .582	.1395 (213) P= .042
LF	.0687 (226) P= .304	-.2425 (213) P= .000
FDEC	.0588 (224) P= .381	.3586 (212) P= .000
L1	-.1186 (226) P= .075	-.0403 (213) P= .559
L3	-.0400 (226) P= .550	-.0107 (213) P= .876
L4	-.1159 (226) P= .082	.2519 (213) P= .000
L5	-.1602 (226) P= .016	.2581 (213) P= .000
L6	-.0832 (226) P= .213	.2906 (213) P= .000
L8A	.0189 (226) P= .777	.3241 (213) P= .000

	B213	BTL
L8B	-.1123 (226) P= .092	.2933 (213) P= .000
L9	-.0901 (226) P= .177	.3889 (213) P= .000
L10	-.0569 (226) P= .398	.2561 (213) P= .000
L11	.0640 (225) P= .339	.3084 (212) P= .000
EC	-.1367 (225) P= .041	.0099 (212) P= .886
TS	-.1352 (226) P= .042	.4265 (213) P= .000
FL	-.0646 (225) P= .338	.4762 (212) P= .000
CP	-.0785 (225) P= .241	.3821 (212) P= .000
CSY	-.1648 (226) P= .013	.4458 (213) P= .000
CBLS	-.1473 (226) P= .027	.3524 (213) P= .000
PTL	-.1584 (225) P= .017	.4876 (212) P= .000

(COEFFICIENT / (CASES) / 2-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

	B21J	BTL		B21J	BTL		B21J	BTL		B21J	BTL
B1	-.0927 (226) P= .165	.3627 (213) P= .000	B12	.0597 (225) P= .373	.4086 (213) P= .000	B19B	.0836 (225) P= .515	.4533 (213) P= .000	B21J	1.0000 (226) P= .	.0282 (213) P= .725
B2	.0108 (226) P= .872	.2190 (213) P= .001	B13A	-.0648 (226) P= .332	.3262 (213) P= .000	B20	-.0709 (223) P= .292	.0738 (213) P= .286	BTL	.0282 (213) P= .725	1.0000 (213) P= .
B3	-.1275 (226) P= .056	.3319 (213) P= .000	B13B	-.0845 (226) P= .505	.6403 (213) P= .000	B21A	-.1027 (225) P= .125	.1712 (213) P= .012			
B4	-.0995 (226) P= .136	.4180 (213) P= .000	B14A	.0973 (226) P= .145	.4967 (213) P= .000	B21B	-.0048 (222) P= .943	.1647 (213) P= .016			
B5	-.0972 (226) P= .145	.3752 (213) P= .000	B14B	.0998 (226) P= .136	.5969 (213) P= .000	B21C	.1600 (225) P= .016	.0617 (213) P= .370			
B6	-.0721 (226) P= .281	.3160 (213) P= .000	B15	-.1810 (225) P= .006	.4824 (213) P= .000	B21D	-.1015 (226) P= .128	.2520 (213) P= .000			
B7	-.0223 (226) P= .738	.0497 (213) P= .470	B16	.0504 (226) P= .451	.4577 (213) P= .000	B21E	-.2508 (224) P= .000	.4774 (213) P= .000			
B8	.0833 (226) P= .212	.3822 (213) P= .000	B17	-.0963 (225) P= .489	.0753 (213) P= .274	B21F	-.1268 (222) P= .060	.4318 (213) P= .000			
B9	.0360 (226) P= .591	.4760 (213) P= .000	B18A	.0998 (225) P= .137	.1990 (213) P= .004	B21G	-.0316 (223) P= .639	.0678 (213) P= .325			
B10	-.0336 (226) P= .615	.2603 (213) P= .000	B18B	-.0878 (225) P= .189	.1438 (213) P= .036	B21H	.1133 (225) P= .090	.1028 (213) P= .135			
B11	.0525 (225) P= .433	.5276 (213) P= .000	GMA	-.1100 (225) P= .100	.3500 (213) P= .000	B21I	-.1885 (224) P= .026	.3848 (213) P= .000			

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Appendix H

COMPARISON OF THE PCT ACHIEVEMENT BETWEEN FIFTH AND EIGHTH GRADES BY MULTIVARIATE AND UNIVARIATE ANALYSIS

MULTIVARIATE TESTS OF SIGNIFICANCE
(S = 1, M = 16, N = 183 1/2)

TEST NAME	VALUE	EXACT F	HYPOTH. DF	ERROR DF	SIG. OF F
PILLAIS	.557	13.691	34.00	369.00	.000
HOTELLINGS	1.261	13.691	34.00	369.00	.000
WILKS	.442	13.691	34.00	369.00	.000
ROYS	.557				

NOTE.. F STATISTICS ARE EXACT.

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EFFECT .. GRADE (CONT.)
UNIVARIATE F-TESTS WITH (1,402) D. F.

VAR.	HYPOTH. SS	ERROR SS	HYPOTH. MS	ERROR MS	F	SIG.
B1	2.452	88.723	2.452	.220	11.112	.001
B2	.731	44.575	.731	.110	6.599	.011
B3	1.032	73.707	1.032	.183	5.629	.018
B4	.433	100.526	.433	.250	1.734	.189
B5	.249	99.948	.249	.248	1.002	.317
B6	.877	19.924	.877	.049	17.707	.000
B7	.771	27.000	.771	.067	11.493	.001
B8	20.771	78.424	20.771	.195	106.474	.000
B9	2.374	97.910	2.374	.243	9.748	.002
B10	8.054	89.737	8.054	.223	36.083	.000
B11	12.361	88.479	12.361	.220	56.164	.000
B12	3.466	95.305	3.466	.237	14.620	.000
B13A	.289	102.542	.289	.255	1.133	.288
B13B	40.395	307.136	40.395	.764	52.872	.000
B14A	2.243	263.347	2.243	.65509	3.425	.065
B14B	16.346	201.562	16.346	.50140	32.601	.000
B15	25.874	74.135	25.874	.18442	140.302	.000
B16	7.994	91.695	7.994	.22810	35.049	.000
B17	.468	91.620	.468	.22791	2.054	.153
B18A	.229	95.067	.229	.23649	.970	.325
B18B	.002	19.007	.002	.04728	.043	.835

B19A	18.919	70.635	18.919	.17571	107.674	.000
B19B	13.070	82.461	13.070	.20513	63.719	.000
B20	2.792	87.749	2.792	.21828	12.794	.000
B21A	3.673	61.683	3.673	.15344	23.939	.000
B21B	.335	66.780	.335	.16612	2.020	.156
B21C	.065	58.456	.065	.14542	.449	.503
B21D	1.111	48.561	1.111	.12080	9.200	.003
B21E	5.125	95.716	5.125	.23810	21.524	.000
B21F	3.637	91.174	3.637	.22680	16.037	.000
B21G	2.965	97.875	2.965	.24347	12.181	.001
B21H	.110	67.582	.110	.16811	.659	.417
B21I	5.717	74.331	5.717	.18491	30.921	.000
B21J	.419	93.092	.419	.23157	1.813	.179